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Photo S. Weinberg

CONSTANTINOPLE, 1453

By William MacDonald

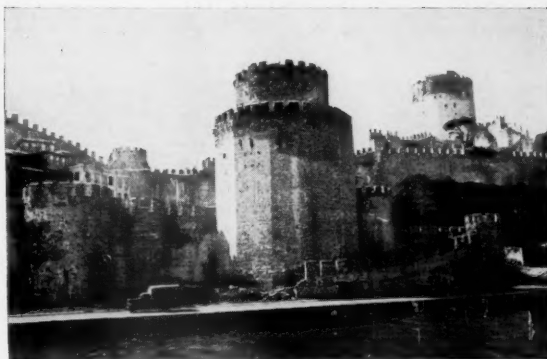
*Instructor in Classics
Weaton College*

ISTANBUL HAS LONG ATTRACTED ARCHAEOLOGISTS. GREEK, Roman, Byzantine, and Ottoman monuments are found in this queenly city which was for so long the mistress of the Near East. This year the Turkish Republic celebrates the five-hundredth anniversary of the fall of Constantinople, and we pause to view some of its structures, often not much changed since 1453, which the soldiers of Mohammed II saw when they entered the city as conquerors. The thousand-year old capital had by then lost many of its ancient wonders, but it was still the richest prize in Christendom. Here a long and rich history, together with the arts and traditions of the Byzantines, mingled with the newer concepts of the Turks. Here the Sultan took up his residence, and from here the Ottoman Empire was governed.

The land walls of Constantinople (opposite page), before which the Sultan and his army encamped on April 5, 1453. These walls were largely built between 413 and 448, and many times added to or repaired. The original walls of Constantine the Great had been about a mile to the east and had enclosed a correspondingly smaller area. These massive fortifications were of concrete faced with squared limestone, the whole being bonded together by courses of brick.

The Fortress in Europe, Roumeli Hissar, built by the young Sultan Mohammed II on the shores of the Bosphorus northeast of Constantinople, before the siege of the city began. Some of the materials were taken from nearby Byzantine buildings. The cannon and bombards of this fort commanded the Bosphorus, while the very erection of the huge structure brought Turkish-Byzantine relations to the breaking point.

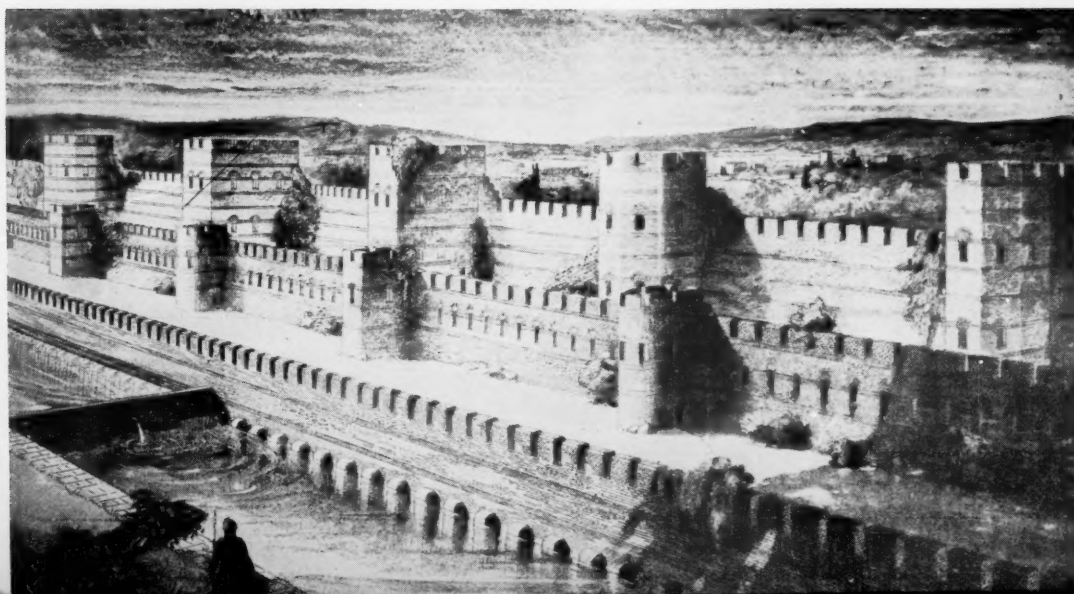
Photo M. Smith

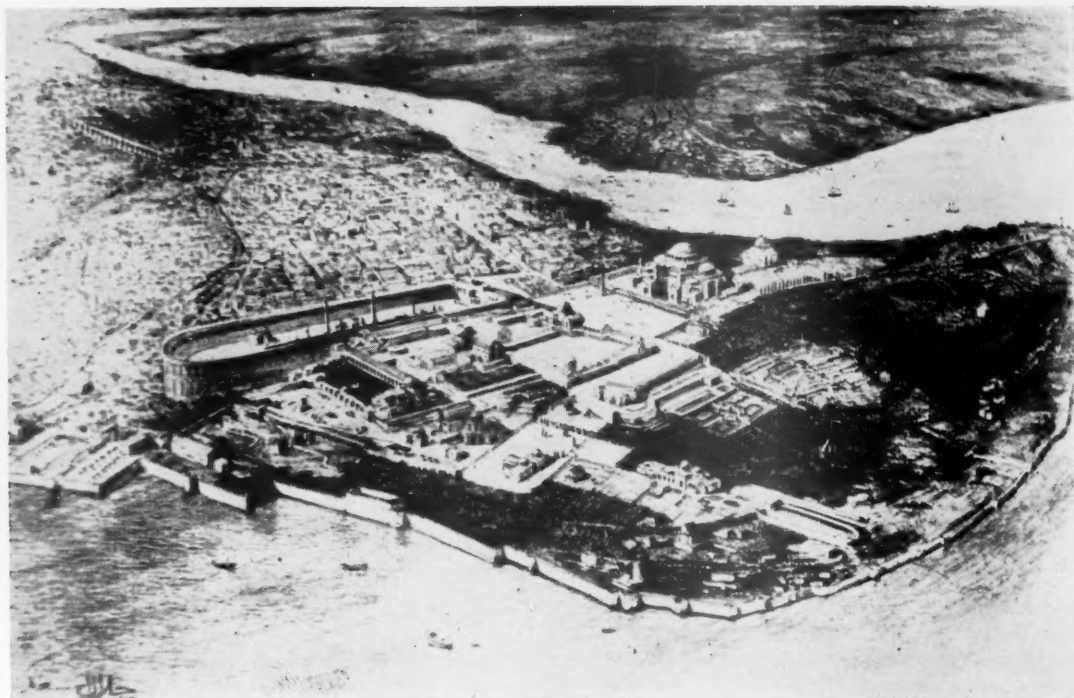


A portion of the landward walls, restored in a sketch which shows the triple obstacle facing the besiegers. First came a great moat, perhaps equipped with dams which allowed the level of the water to be regulated in accordance with the changing contours of the land. Integral with the moat was the outer or first wall, a low breastwork shielding the outer walk. Next appeared the second or middle wall, rising about thirty feet above the outer walk. Loopholes, battlements and ninety-six towers made this second wall a formidable defensive work in itself. Behind the middle wall was the inner wall, intended chiefly for communication. Doors in the middle wall gave access to the outer walk, the latter being the area where the defending troops were stationed. Finally there rose the inner wall, forty

feet high and fifteen feet thick, protected by ninety-six large towers each about sixty feet tall. The towers were of varying plan, and were entered from the rear of the inner or third wall. A rampart fronted by breastworks topped the inner wall.

The three walls were very deeply footed to prevent successful mining, and during the siege of 1453 the Greek and Italian defenders were able to locate and destroy many Turkish mines. The thousand-year old walls were not strong enough to support the crude guns of the imperial artillery, however, for cracks often appeared in the walls after the guns were discharged. Huge Turkish cannon finally breached parts of the walls, and on the morning of May 29, 1453, the Sultan's Janissaries overwhelmed the defenders.





From *The Architectural Review*, London.

Constantinople, about the year 950, looking toward the north. The land walls are out of sight to the north-west, while the fine harbor of the Golden Horn bounds the city to the north. The Sea of Marmora is in the foreground, and the Bosphorus extends to the north-east. Some seven miles of sea walls were erected for the

city's shore defenses. Behind them here appear the Hippodrome, the church of Hagia Sophia and the many buildings of the imperial palace. At some distance to the northwest is the aqueduct of the Emperor Valens (364-378), part of the superb metropolitan engineering works executed in the old Roman manner.



The aqueduct of Valens, in the center of the city. Constantinople was efficiently supplied with water, as was Old Rome. Septimius Severus, Constantine the Great, Justinian and others provided the inhabitants of Constantinople with an ample supply of water. During the Arab sieges of the seventh and eighth centuries many cisterns were built.

The Golden Gate. The landward walls were pierced by many gates, civil and military. Of these the most resplendent was the Porta Aurea or Golden Gate, used for triumphal and ceremonial entrances into Constantinople. The central portion of the outer gate is shown here. Polished marble, statuary, carving and gilding set this gate apart from the others, and here in better days the ceremony of imperial triumph began. The Golden Gate, near the Sea of Marmora, was not attacked in force by the Turks. The main breach was made about a mile south of the Golden Horn, and there the last emperor, Constantine XI, died fighting.

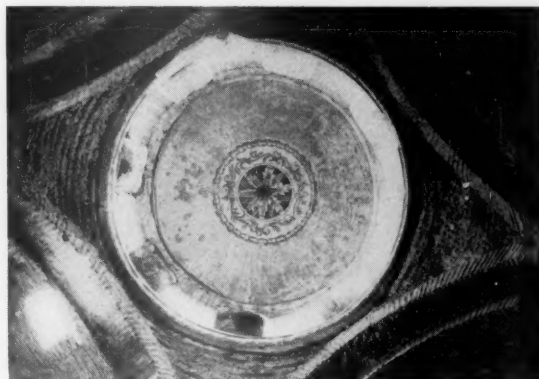


The cistern called Binbirdirek (the thousand and one columns), probably built during the fifth and sixth centuries. The reservoir is partly filled with silt and debris, but the double columns with their simple impost capitals show clearly. Each capital receives four arches made of brick, and each square unit thus formed is domed up from all four sides by brick arches of ever decreasing span. Reduplication of the domical vaults in brick is one of the outstanding characteristics of Byzantine architecture.



Constantinople was a city of churches. The first monumental church erected in the city that still survives, though in ruins, was dedicated to Saint John the Baptist. It may have been built by a certain Studius in 463; it is usually known as Saint John of the Studion. Located near the Golden Gate, the church was long a mosque. Today its original wooden roof is gone, and what remains has been seriously damaged by fire and the elements. Much of the interest in the structure derives from its basilican style. A file of columns, separating one of the aisles from the nave (right), may be seen in the picture of the interior, while the straight entablature, typical of many early Christian basilicas (Old Saint Peter's in Rome, for example), may be seen both outside (left) and in. This type of church was almost entirely displaced, in the eastern Christian communities, by the centralized, frequently domed, church structure.

Looking up into a dome (below, right) of the church of Saint Mary Panachrantos (the Immaculate). The central decoration, lighted by a ring of upper windows in an unseen drum, is Turkish. Below, toward the observer, is the main architectural device of the Byzantines. Intrigued by domical problems, they developed this structural system. Four supporting arches form a square, which appears here as a sort of diamond or lozenge because of optical distortion. Reaching down along the arches to their imposts, and spreading above to the ring of masonry on which the drum and dome rest, are the pendentives. These are approximate spherical triangles made of brick and mortar, which effect the structural transition from the square, formed by the four supporting arches, up to the circle, from which rise the drum and dome. Columns or piers supporting the four arches complete this light and clever engineering system. Here the brick courses of the pendentives are clearly visible, curving and lengthening as they rise to



carry the domical superstructure, and narrowing down to deliver the thrusts of the cupola to the vaults and supports below. The Turks studied this structural device and eventually adapted it to their own style of building.

Another of the famous churches of Constantinople was that of the Chora, now a mosque (Kariye Djami). The minaret proclaims the success and permanence of the conquest, but inside archaeologists labor to revive the glories of long-covered Christian fresco and mosaic. Much of the building dates from the late period of the Empire, though the church may have been founded as early as the time of Justinian the Great (527-565).

Photo S. Weinberg



The Church of Saint Mary Pammakaristos (the All-Blessed) was reserved for the use of the Patriarch of the Orthodox Church from 1453 until the end of the sixteenth century. This church underwent many changes after its founding under the Comnenian dynasty. The block-like mass seen here is very reminiscent of late provincial Byzantine architecture in the Balkans, while the considerable use of stone also points to a late period.

Autumn 1953



The Great Church of Holy Wisdom, Hagia Sophia, was made a mosque a day or so after the fall of Constantinople. Recently the building was declared a museum, in order that the uncovering and cleaning of its mosaics, as well as other archaeological activities, might proceed without violating the law of Islam. Round about the museum (below) stand tombs of the Sultans, similar in structure to Hagia Sophia's baptistry, itself now the tomb of the Ottoman Sultans Mustapha I and Ibrahim.

Moslem shields and Christian mosaic appear almost side by side in this picture of the apse of Hagia Sophia (left), where light streams into the building as it has for fourteen centuries. The lighting fixtures are similar to those used in Christian times, when on festival occasions many thousands of lamps were lit inside the church. Hagia Sophia was in part the model for the Turkish mosques of later centuries, and the building has few peers among the domical structures of the world. Of brick and mortar, with central piers of stone, the building has survived earthquakes and conquest to preside over the five-hundredth anniversary of the fall of Constantinople.

Photo S. Weinberg



A Modernist Visits Greece

By Walter Pach

MATISSE USED TO HAVE IN HIS GARDEN CASTS of the greater archaic statues from Greece; PICASSO has paid homage to the classics by a whole series of works; MAILLOL was always going deeper into his acceptance of the Greek sense of beauty; and those amazing sculptures of RENOIR's later years show how much the genius of our time and the genius of antiquity have in common.

At an earlier moment of the modern period, BARYE had done a figure so close to a masterpiece of about 400 B.C. that a competent student thought it was taken directly from the Greek bronze, although the ancient work had not been excavated until a third of a century after BARYE's death. And then there is the question of DELACROIX' relation to the painting of antiquity, as seen in Pompeii. The master of nineteenth-century romanticism never set foot on the soil of Greece or Italy, yet there is an unmistakable connection between his art and that of the ancients who, in his day, were almost unrepresented in the galleries of France and England which he had seen. For years I had tried to imagine how DELACROIX reached his profound sense of the quality of ancient painting, but only recently, on a visit to the Naples Museum, did I notice a small Pompeian fresco previously known to me through a drawing by the French master. He never saw the original, so his admirable copy was made, un-

questionably, from an engraving, one in a book of such works which he mentions in his will as a thing to be returned to the cousin who had lent it to him.

Less surprising is the case of INGRES: in addition to his lifelong devotion to the sculpture of the Greeks, he had studied and even copied their painting. In the Musée Ingres at Montauban, his birthplace, where are nearly all the treasures remaining in INGRES' studio at the time of his death, is a copy after part of a fresco



Venus with the Apple, the greatest of Renoir's late bronzes. Courtesy Jacques Seligmann & Co., New York.

Walter Pach is a painter by profession, but (like many another of his calling) has written and lectured on various phases of the subject which interest him most. Although his books, from the Georges Seurat of 1923 to The Art Museum in America of 1948, are mainly about the moderns, and although he was one of the organizers of the "Armory Show" of 1913, the pivotal event in giving this country its knowledge of modern art, the classics of painting and sculpture have been to him a life-time study. He regards any separation between ancient and modern art which tries to differentiate them in matters of purpose and quality as arbitrary, and also as the gravest obstacle to an understanding of each period. The present article is therefore one which touches one of the author's central interests.

from Herculaneum, the *Herakles and Telephos*. The authorities at Montauban prudently said there was no document to prove that INGRES had made the copy. To me it seemed so fine that only he himself could have done it; and there was also the fact that the master, many years later, used a hand from the ancient work for the hand of Madame MOITESSIER in that nobly beautiful portrait of her now at the National Gallery in London. The likeness of the hands in the ancient work and the modern one can, by no stretch of the imagination, be attributed to chance, for the identity extends to every detail of the fingers. So INGRES was following the copy dating from his early years. But that was still no proof that the copy was by himself; it might have been one acquired from a pupil. Haunting my mind was a detail from an article which was eventually tracked down—the reminiscences of an English artist who, in his youth, had visited PUVIS DE CHAVANNES. That great man, going back in turn to his own early memories, recalled a visit he had made to the studio of INGRES, and told of seeing that copy of *Herakles and Telephos* there, together with another such work, which INGRES had said were *by himself*.

I could go on with my examples of the way the moderns of their period—as were the men I have men-

tioned—took with full hands from the creative things of earlier times. BOTTICELLI'S *Birth of Venus*, which seems to epitomize the new life in his time, closely follows as its model the *Venus of the Medici*, only the head being changed. The ancient marble was already in a palace of the princely family which employed the painter, and his admiration for the sculpture had a determining influence on his later style. At the Uffizi there is an even more striking example of the same thing, in SIGNORELLI'S *Madonna and Child*. In the painter's own time this work created a scandal because it was the first religious picture into which an artist had ventured to introduce nude figures. His example was immediately followed by MICHELANGELO and others whose boundless enthusiasm for the classics explains the word *Renaissance*.

"Pan is dead" was the cry that echoed around the shores of the Mediterranean when Christianity established its beliefs in place of the ancient ones. But SIGNORELLI, painting his nude shepherds in the background of a most sacred Christian subject, seemed to reply "Pan is *not* dead!" Believing the painter, I had for many years desired to visit the Great God in his own land. But always there had been some obstacle. Finally I saw my way to realize the dream.

Walter Pach Collection



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Museum Antiker Kleinkunst, Munich



AS THE PLANE neared Athens, the landscape was too much affected by my unaccustomed view from above and by my excitement over the magical modern approach to the ancient city. But one thing remains with burning vividness from that last hour in the air: the sight of "The Isles of Greece" in their set-

On the left, a nude by the nineteenth-century French artist Barye. On the right, reversed, a Greek bronze of the fifth century B.C.

A pencil drawing by Delacroix of a centaur carrying a girl. The artist was not familiar with the original Pompeian painting, now in the National Museum, Naples; he copied from an eighteenth-century engraving.

Walter Pach Collection



ting of blue sea. Homer speaks of it as "wine-dark" and other poets have used the word sapphire to describe it. Only a poet could find words that would even suggest the effect of those islands, drops of molten gold, as they seemed, against unsoundable depths of

blue enamel; that man-made jewel, in which light comes back from the metal below the vitreous glaze, may perhaps be the best equivalent for the effects I got as we soared over the Aegean.

No viable theory as to the relationship of natural beauties and those of art has come to my notice. The extraordinary effects of light and color of the fjords of Scandinavia have been described, but these attractions have not inspired great painting; nor does the spectacular scenery of the Yellowstone have a good picture to its credit. The almost monotonous sobriety of Holland furnished subject enough for landscapists as great as RUYSDAEL and HOBBEEMA, just as the gentle charm of the Ile de France has been all that was needed by the long line of painters from FOUQUET to SEURAT. On the other hand, in Greece one gets an absolute maximum of impressiveness at Delphi; the majestic and yet joyous calm at Olympia imposed on the warring factions of ancient Hellas a sense of peace so enduring that we still feel it today; and looking over the sparkling blue of the Gulf of Corinth to the kindling green of the farther shore, with the violet mountains behind, one gladly concedes that natural beauty can go no further. But this is the place where the beauty of art reached its limit also. So what conclusion are we to

draw? I see none unless it is connected with those old words "Man is the measure of all things"; certainly he is the maker of all art.

To be sure, the Acropolis, for me the greatest experience in Greece, does owe much to the uniting of natural and man-made beauty. The rocky hill that juts up so suddenly out of the city around it was at one time just another eminence rising above a strip of level country. There are many such to be seen in this land. Since Greece is full to the brim with the beauties of nature, it is not those which account for the glory of the Acropolis, even if we note how its position within a city differentiates it from peaks among the mountains we see on our travels. We climb the winding road around the "Hill of Gold," we pass through the monumental gateway to the final heights, and at once the Parthenon is before us. Is the great temple the explanation of the unique sensations we have been experiencing? It is not that building alone, of course, for here too is the Erechtheum, marvelous in its proportions and giving us a surprise for which no photographs or casts had prepared us—the Porch of the Maidens. Splendidly preserved, as compared with the sculptures of the Parthenon, they give us a goodly moment of illusion that we are living in the supreme days of the fifth century.

We look again at the Parthenon, and somehow it seems to harmonize—even intentionally harmonize with the line of the mountains which ring the Athenian plain. One thinks of DELACROIX' words: "The illusions I create are what is most real in me." Perhaps this appeared enigmatic at times. Here its meaning is as transparent as this clear air: the mighty rock on which we stand, the buildings and sculptures it lifts so divinely into the light, the city beyond its rim, the mountains beyond the plain, all are instruments of an illusion that makes one feel the sea beyond the mountains, other lands beyond that sea, other times and races of men looking with all their eyes toward this ultimate center of civilization, thought and art.

If you want proof of this, think of all the railroad stations, college halls, churches, etc. copied from the Parthenon—and then look again at the building itself. You have seen structures far greater in extent than the Parthenon; you have never seen a work that gives such a sense of vastness—even while your reason retains its power to estimate the actual size of the temple, a quite moderate size. It is the incommensurable about it that leaves one breathless, and this is devoid of any connection with historical interest, the chorus of eulogy throughout the past or the near-ruin of the building. It is not the color, an indescribable meeting of russet gold and pink, that differentiates the Parthenon from the impression we had from the photographs which, we thought, had prepared us for it. The unique surprise it causes in us is a matter of this new dimension created by the rock on which it stands, the city, the mountains and the atmosphere. No wonder that RENOIR could say of the Parthenon (without having seen it): "The more they measure the irregularities among its lines, the more mysterious it becomes."

THIS MYSTERIOUS QUALITY of Greek art became even more apparent to me, the more I saw of the sculptures at the National Museum. Among them are examples from temples that stood on the Acropolis before the century of the Parthenon, and I was impressed above all by that surge of life, almost unrestrained or

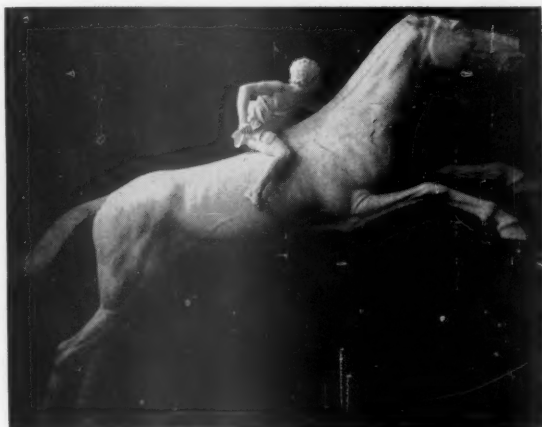
even savage, which permitted the Greeks to go on perfecting, generation after generation, without loss of the underlying vitality which keeps their most refined production in the realm of living things.

It would of course be nonsense to talk of the world as young when the fighting men of the archaic time matched themselves with monsters or, in terms of centaurs, satyrs and nymphs, told of the power of sex passion. The world was very old, and reminiscences of Egypt and the Near East show that the Greeks knew how late they were in history. If we of today do not put their power into our art, it is not that the world is cooling off, but that our energy flows into other courses.

Modern art, the tremendous thing that we may date from the French Revolution, has had the double task of coping with the political ideas released by that upheaval and with the results of science, the great passion of the nineteenth century and the earlier twentieth. Perhaps the period just ahead is one in which the chaos of ideas we have been passing through will reach a new synthesis. That word has been used a thousand times about the work of Greece, and so there may be, after all, a likeness between the character of the classic time and our own. That would explain why the modernist, the man who believes his own period has something to say, has an always growing delight in and com-



This bronze Hellenistic jockey and some fragments of his mount were recovered from the sea floor some years ago. The latest solution in the reconstruction of the original group is shown here in two views.



prehension of Greek sculpture.

As to the delight of those galleries in Athens, the quiet joy they offer, I shall not try to speak, because such impressions are incommunicable. On the other hand, I can say that it was my good fortune to be in Athens when the National Museum had as its guest the famous charioteer from Delphi. Others will see it in the city to which it belongs, but it was ever so useful to encounter it in the first room one entered, for it demonstrated all over again that one simply must see originals. From the first room of the museum till the last, the same lesson was driven home again and again. I had proof of what I have often affirmed—that, in art, there is no such thing as a reproduction. There are only imitations, like wax fruit or paper flowers. So that, quite literally, the difference between them and the things of which they offer a “counterfeit presentment” is the difference between death and life.

THE BRILLIANT AND profoundly scholarly work of conserving the ancient glories and making them accessible again after the war is being done by a few devoted men and women as a labor of love. The present lines are meant to offer, today, a tithe of the gratitude that the after-time will owe to them.

Here is one example of what the Greeks of today are doing: from that astounding space of sea floor where the superlatively important bronze Zeus or Poseidon was brought forth by divers, some years ago, the figure of a jockey was more recently rescued from the waters. The excited boy, urging on his mount to an increased effort, is unique in our heritage from the later Greeks. But the outstretched legs of the jockey, separated from his horse, seem almost unnatural in their restless groping for support. If only the horse could have been recovered! And then the sea, as if aware of this need, actually did permit the divers to find a portion of the horse. It has been cast in plaster, as has the jockey, and an able young sculptor is constantly at work on adjustment of the two pieces, until certainty as to their relative position is reached. Then the two bronzes can be soldered together, in full confi-



dence that they will be as they were 2000 years ago.

I also saw other objects which are little known outside Greece: once again, the goal of today's effort is to lay the great treasury of material open to the world—properly lighted and spaced, so that scholars may estimate its importance and relationships and may go about their task with every possible advantage. That, I maintain, tells something of the spirit of modern Greece, of its magnificent response, in terms of such wealth as it alone can offer, to the gestures of friendship and sympathy it has known from our country and others.

The great thing is that work—very living work—goes on in a dozen fields, or doubtless far more than that, for government, education, science, etc. are quite as much expressions of modern life as are the arts. Is it not enough if I relate that I saw the waters of the Castalian spring at Delphi still flowing generously, and if I testify that I saw evidence to prove that the inspiration which ancient Greece drank from the sacred waters is still open to modern Greece—and to the modern world in general? What I saw convinced me anew that, whatever the problems peculiar to a given time and place, however insistent may be the demand of our own time for true answers, the worker in every field of the arts will here find refreshment, new strength and new insight, as he will nowhere else.

THE ATHENIAN AGORA

Excavation and Reconstruction

By Homer A. Thompson

Field Director, Agora Excavations

THE AGORA, WHICH WAS THE PRINCIPAL PUBLIC square of ancient Athens, served as the administrative and commercial center of the city state and was also the scene of much of its intellectual, social and artistic life. Here the American School of Classical Studies has recently concluded its eighteenth campaign of excavations.

During this season the south side of the square was completely cleared and two large public buildings un-

covered. Their size and prominent position show that they were among the most important in the ancient city. The earlier of the two, rectangular in plan, measures about 92 by 105 feet and was found to have been built in the second half of the sixth century B.C. It is likely that this building was a law court, perhaps the most famous of all, the *Heliaia*. Here juries composed of as many as 1501 Athenian citizens heard the eloquent pleas which were delivered by the litigants them-

A view from the roof of the Hephaisteion, looking southeastward over the southern part of the Agora. In the background are the Acropolis (left) and the Areo-

pagus or Mars' Hill (right). The circular foundation at the lower right supported the Tholos, i.e. the Club House of the Presidents of the Council. The nineteenth-

century houses in the middle of the view, which now serve as headquarters and storage space for the expedition, border the southern edge of the ancient square. In front of the houses are the ruins of two early buildings cleared in 1953: to the right one which has been tentatively identified as a law court, and to the left one thought to be the Thesmotheion or headquarters for officials responsible for laws and judicial procedure.





Equipment from a law court of ancient Athens. The wheel-shaped objects of bronze are ballots, and one of them is so inscribed: "Official ballot." They are of a size to fit in the palm of the hand. Each juryman received a pair, the solid axle for acquittal, the hollow for condemnation, and as he left the courtroom he registered his vote by dropping one into a bronze urn to be counted, the other into a discard box. The rectangular plaque, also of bronze, is a juryman's identification card. All are of the fourth century B.C.

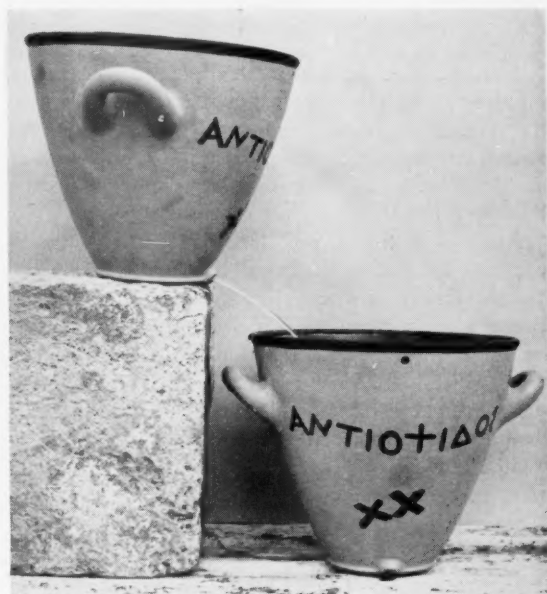
selves, but which had been prepared for them by such distinguished lawyers as Demosthenes. This identification of the building is supported by the previous discovery in the area of numerous bronze ballots such as the members of the jury used to record their votes. These small wheel-like objects had either solid or hollow axles, the former for acquittal, the latter for condemnation. Another essential furnishing of an ancient law court, the *klepsydra* or water-clock, had been found in a nearby well during the campaign of 1933. By means of this device speeches were measured not by hours or minutes but by quarts of water.

Adjoining the east side of this building was found a second structure, dating from the latter part of the fifth century B.C. It consisted of a row of rooms, probably fourteen in number, each approximately fifteen

A pair of *Klepsydrai* or water-clocks (literally "Water Thieves"). These modern replicas are patterned on an example of the fifth century B.C. found in the Agora in 1933. The vessel is $9\frac{1}{8}$ inches high and holds $6\frac{3}{4}$ U. S. quarts when filled to the overflow hole. The speaker could speak as long as the water ran, i.e. six minutes. Inscribed on the wall is the name of an Athenian tribe: Antiochis, and an indication of the capacity: two choes. This device was such an essential part of the equipment of an Athenian law court that the word "klepsydra" was used as a synonym for "law court."

and a half feet square inside. The single door of each room looked out across the Agora through a common porch which was supported by two rows of columns. The fact that the individual rooms are of the right size and shape to accommodate seven dining couches of standard dimensions, combined with traces of culinary activity, indicates that the building was an official dining place, a *syssition*. The building may therefore have been the *Thesmotheion*, which we know from ancient literature to have been the office and dining hall of the six *thesmothetai*. These officials had general supervision of the law courts and, in particular, presided over judicial proceedings in

the principal law court, the *Heliaia*. Ancient literary references mention that the *Thesmotheion* and the *Heliaia* stood close together, a convenient relationship which corresponds with that of the two newly explored buildings.





Head of a warrior in terra cotta. First half of the fifth century B.C. Height 8½ inches. Found in 1953, this head is one of the rare examples of sculpture in terra cotta known from Athens. It probably formed part of the external sculptural decoration of a building.

sian invasion (480 B.C.). From this well were recovered a number of vases in the late black-figured style and several exquisite fragments of drinking cups decorated in the succeeding red-figured manner.

Among the sculptural finds of the season was the terra-cotta head of a warrior, about two-thirds life size, dating from the first half of the fifth century B.C. On either side of his helmet is painted the winged horse, Pegasus. Though common in Italy and Corinth, terra cotta was seldom used for major sculpture in Athens where fine marble was abundant. The newly found head is one of the very few and one of the finest examples of its kind yet known from Athens.

A DISCOVERY of this season has helped in the interpretation of a sculptural find made in the area of the Agora many years ago. From the curbing of a mediaeval well were extracted some sixty fragments of marble which, when assembled, proved to be the base for a large statue. On the front of the base is a

In addition to the clearing of these two early public buildings, new light was shed by this season's work on the remodeling of the Agora which occurred in the second century B.C. This is now seen to have been one of the boldest and most imaginative projects in the history of ancient town planning.

Apart from topographical and architectural developments, the past season's work has yielded, as always, a great variety of material from many periods. The Bronze Age is represented this year by two chamber tombs of the Mycenaean period (thirteenth century B.C.) which had been forgotten and overlaid by three successive public buildings of the classical period near the northeast corner of the square. From these burials come a number of decorated vases and a necklace of glass, carnelian and amethyst beads.

Several wells of the tenth to the sixth century B.C. were cleared. Of particular interest is one that had been abandoned and filled up at the time of the Per-



Fragment from the floor of a drinking cup. From a well at the southwest corner of the Agora abandoned at the time of the Persian sack in 480 B.C. The girl washing herself at a basin is from the hand of a nameless painter working about 500 B.C.

metrical inscription: "I am the Iliad, that was both after Homer and before; I have been placed here alongside him that bore me in his earlier years." The statue was evidently a personification of the *Iliad* which was recognized by the ancients as an earlier work of Homer, the *Odyssey* being later. In 1869, in a nearby excavation, the Greek Archaeological Society found two marble statues of female figures in armor which were subsequently identified as personifications of the *Iliad* and the *Odyssey*. These statues, now in the National Museum at Athens, must be associated with the newly found base. The group, together with the still missing figure of Homer, undoubtedly adorned the public library built about A.D. 100 by T. Flavius Pantainos, the ruins of which were discovered in 1939 at the southeast corner of the Agora.

Among the coins found this season may be mentioned a gold stater of Alexander the Great struck at the mint of Sardis. The coin was exposed in the graveled surface of the ancient square by a heavy rain and was discovered by a workman in search of snails.

WITH THE PAST season's work the major task of clearing the ancient square has been completed. In the future, field work will continue, but on a reduced scale. Supplementary exploration must be carried out around certain buildings. Large areas in the immediate environs of the square proper, notably on the north slope of the Acropolis and Areopagus, have still to be finally explored. It remains also to landscape the area and to fit it into the archaeological park that already exists in the heart of Athens. And finally, a museum must be provided to house the finds, which include over sixty thousand catalogued objects in addition to a vast amount of other material of documentary value. At present all this material is stored in a group of nineteenth-century houses at the south edge of the ancient square.

For the permanent museum it is proposed to reconstruct one of the ancient buildings that bordered the square, namely the stoa or colonnade built about 150 B.C. by King Attalos II of Pergamon [see *ARCHAEOLOGY* 2 (1949) 124-130]. Attalos, like other princes of that time, had studied in Athens as a youth and, on ascending the throne, made this magnificent gift as a gesture of gratitude to the city of his Alma Mater.



Base for a statue representing the personification of Homer's *Iliad*. The statue, found in 1869, is in the National Museum, Athens. The inscription reads: "The Iliad that was both after Homer and before; I have been placed beside him that bore me in his earlier years."

Attalos' building, with its length of 382 feet, closed the east side of the square. Each of its two stories comprised a row of twenty-one single-roomed shops in front of which ran a continuous porch supported by two rows of columns. Before the building lay a broad, unroofed terrace.

THE STOA SERVED many purposes. Its forty-two shops, so conveniently situated at the edge of the square, were undoubtedly among the most fashionable in the city. The broad porches were intended not merely for the convenience of the shoppers but as shady promenades for the citizens whose social and business life was passed largely in such settings. On festival days its two floors and its terrace provided standing room for thousands of spectators watching the processions as they passed through the Agora on their way to the Acropolis. Here, too, the philosophers met their disciples, and that itinerant philosopher St. Paul, when he "disputed in the market place," undoubtedly strolled in this very building. We also know, from ancient inscriptions, that statues and painted portraits of distinguished citizens were exhibited in the Stoa of Attalos.

When Athens was sacked by a band of northern barbarians, the Herulians, in A.D. 267 the building was wrecked and its timber work burned. Soon afterward its walls were incorporated in a new line of fortifications, so that much of the building has been preserved. The original design can be recovered in virtually every detail. The materials to be used in the reconstruction are the same as those in the original building, that is, gray limestone for the walls, marble for the principal

façade and for the interior trim. The whole undertaking, it is estimated, will require about four years.

IN ADDITION TO providing an adequate museum, the reconstruction will make immediately intelligible to the visitor the design of a stoa, something that is nowhere else possible. The stoa, as an architectural type eminently suitable to Mediterranean climatic and social conditions, had a very long history and was easily the most common kind of public building in the ancient Greek city. The Stoa of Attalos is a first-rate example of the fully developed type. The reconstruction will also serve to define the limits of the Agora, screening the ancient square from the miscellaneous buildings of the modern city. Standing on the upper floor of the Stoa, the visitor will command a perfect view of the great square.



Cutting limestone blocks for the reconstruction of the Stoa of Attalos. The stone, similar to that used in the original building, is drawn from ancient quarries in the harbor town of Piraeus.



Restored view of the Stoa of Attalos as seen from the northwest, with the Acropolis at the upper right. Only the northern two-thirds of the building are here shown. Drawing by the firm of W. Stuart Thompson and Phelps Barnum from data supplied by John Travlos, Architect of Excavations in the American School of Classical Studies at Athens.

RESTORING POMPEII

Methods Used in the "New Excavations"

By A. W. Van Buren

THE SYSTEMATIC EXCAVATION OF POMPEII dates from the year 1748; and for the greater part of two centuries the houses were uncovered by the simple process of removing first the modern soil and then the *ejecta* (upper stratum of two meters or more of fine ashes and lower stratum of three meters of pumice stones) from the eruption of A.D. 79, together with such fragmentary debris from the upper parts of the houses as might still be surviving mixed with the volcanic matter. Attention was concentrated on the painted walls and the valuable works of art in the ground-floor rooms. The results appear in the older, long familiar publications. These convey an inadequate, largely conjectural impression of the upper parts of the houses, and in particular they offer little evidence as to upper-story balconies and windows, or upper-story planning in general, and not the slightest suggestion of the sloping roofs which overhung the sidewalks and protected the gaily painted fronts of the houses from sun and rain.

When VITTORIO SPINAZZOLA became director of the excavations in 1910, his primary objective was to remedy this defect—to recover material evidence as to

the nature of the upper stories. At neighboring Herculaneum such elements had been preserved by reason of their being encased in the torrents of volcanic mud that engulfed that city; but the excavators had paid slight attention to them; and with this partial exception, the conditions prevailing at Pompeii were unique and called for a special method of excavation. SPINAZZOLA reasoned that the remains of upper stories at Pompeii must surely still be in existence, buried among the layers formed in that city by the successive phases of the great eruption, with their concomitant earthquake shocks. Tile roofs and the collapsed upper parts of walls and columns should be found lying exactly where they had fallen, awaiting only the well trained eye and observant mind of the excavator to be recognized and interpreted and to be restored to their original positions. He decided to apply this new method to the clearing of a stretch of one of the main thoroughfares of the city; and he trained his capable staff of workers to remove the layers of *ejecta*, proceeding downward from the modern ground level, little by little, carefully observing, saving and replacing each fragment in a framework which eventually was incorporated in a re-

The author, Professor Emeritus of Archaeology at the American Academy in Rome, for many years interpreted the remains of Pompeii to the members of the Classical School of the Academy; this interest led to a series of contributions to scholarly journals and eventually to his comprehensive article on Pompeii in the Real-Encyclopädie of Pauly-Wissowa.

The appearance of the authoritative publication of the remarkable results achieved in the campaigns of the years 1910-1923 (Vittorio Spinazzola, Pompei alla Luce degli Scavi Nuovi di Via dell'Abbondanza [1910-1923], Rome 1953) for the first time makes it possible for scholars to obtain an adequate idea of the unique method of excavation and restoration adopted by Spinazzola and the unprecedented discoveries that ensued. The photographs which accompany Professor Van Buren's account were taken at the moment of excavation or when the walls had only recently been uncovered, so that they are now irreplaceable. They were generously offered for this article by Professor Salvatore Aurigemma, to whom the responsibility fell, after Spinazzola's death in 1943 and after the damage caused by war later in that year, of seeing the work worthily published. The Italian Government is at present resuming, on a large scale, the excavation of this buried Campanian city, so that further interesting discoveries may be expected.



The Via dell' Abbondanza, looking west, with balconies and roofs replaced. The first house on the left, north, is that of A. Trebius Valens (Regio III, Insula ii, no. 1 according to the present numbering). Its front was a regular *album* (in the Roman sense) of painted notices (largely destroyed by the bombardments of 1943, a circumstance which lends value to photographs taken before that time). The first house on the right (Reg. II, Ins. ii, no. 3) has an overhanging upper story of rubble-work originally set in a framework of wooden beams, now replaced by steel and reinforced concrete.

An upper-story colonnade with triple window spaces (Reg. IX, Ins. xii, nos. 1-2), at the time of its discovery. The stuccoed columns of tufa have grooves for setting the wooden frames of railings and windows.

construction, in durable materials, of the original fabric. He also impressed upon them the need for preserving the countless bits of stucco from the surfaces of walls and ceilings with a view to reassembling these and thus, as far as possible, recovering the paintings that formed a special adornment of the house interiors. With this went the re-erection and preservation of the many-colored façades, a revelation of the aspect of the city and its testimony to the outdoor life and interests of the inhabitants.

As for the wall-paintings, any attempt to do them justice would far exceed the limits of these pages—they include, for example, a detailed reproduction of a stage setting with actors engaged in presenting, as it seems, a scene from the *Iphigenia among the Taurians* of Euripides.

The continuation of the same street-front (Reg. IX, Ins. xii, no. 6) when it had been partially excavated. First, at the extreme left, the house front that appears in the figure above, right; then, an adjacent house with a similar colonnaded upper story; still farther to the right, the remains of the tile roof that overhung the sidewalk. The tiles had remained almost in their original position, resting upon the bed of volcanic ashes; this enabled the discoverers to observe the two vacant spaces among the tiles, the purpose of which appeared when the excavation had been carried down to street level: see opposite page.

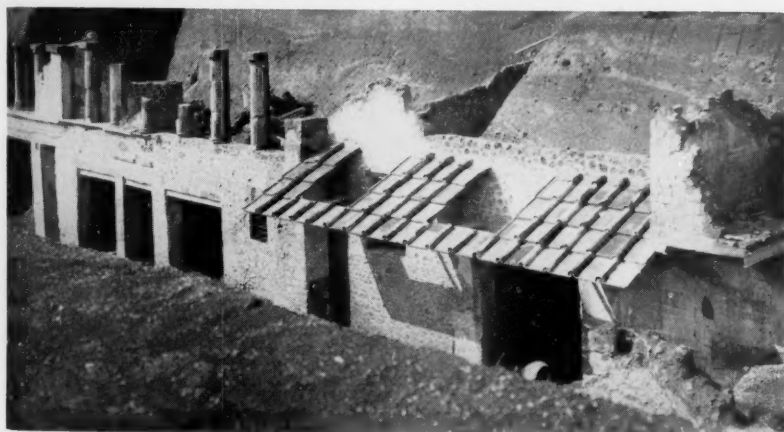


But an entirely unforeseeable result of these campaigns of excavation was the finding, on the walls of three rooms of unusual plan, of elaborate friezes representing long series of episodes from the *Iliad*, each series executed in a distinct artistic style—Hellenistic painting, Roman Imperial painting and Flavian colored relief. The illustrations here presented show their re-

spective characteristics, and two of them suggest the care and skill with which the workmen collected even the tiniest bits of painted stucco wall surfaces lying among the debris and fitted them together, thus recovering a valuable portion of the cultural heritage of the ancient world, of equal interest to the students of literature and to the art historians.



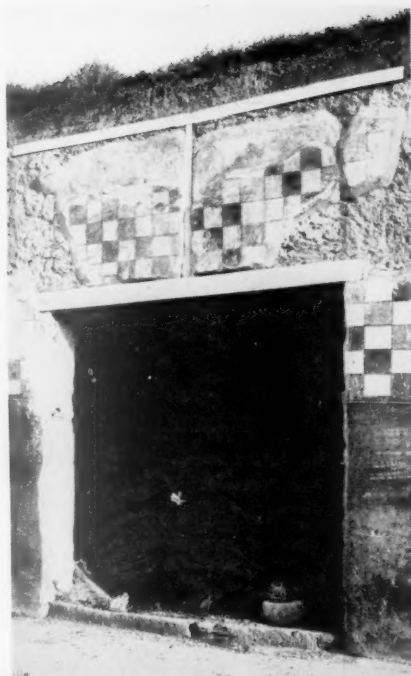
The house front shown opposite, when it had been fully excavated and the upper parts had been replaced in their original positions, with the help of durable modern materials. The back wall in the distance shows a line of holes which contained the ends of the rafters that supported the floor of the upper story. Within the narrow doorway to the right is visible a plaster cast taken from the impression left in the moist ashes by the flight of wooden stairs and its sloping support. This is further evidence for an upper story. Observe the precautions adopted by the Administration to protect the stucco surfaces of the street fronts with their painted notices from the effects of rain and of direct sunshine.



The continuation of the street, after its systematization. The broken ancient tiles are replaced in position by new ones. The openings in the roof gave light to the doorway and window beneath them. At the extreme right, note the partially reconstructed upper-story room overhanging the sidewalk; and on the stuccoed wall surface beneath it, the lavish display of painted election notices.



A stuccoed and painted wall (above) of rubble set in a wooden framework, as discovered (Reg. IX, Ins. xiii, no. 6). The wood had slowly become carbonized or disintegrated, hence the workmen are isolating each compartment preparatory to re-erecting it in a new framework.



(Right) The result of the above undertaking: the front of a fuller's establishment (as attested by a painted inscription). Checker-board pattern in vivid colors—white, green and dark red.

Here the removal of the layers of ashes and of the topmost pumice stones has disclosed one of the most remarkable among the painted house fronts (Reg. IX, Ins. vii, no. 1). The wooden beams in which the rubble of the upper part of the wall was originally set were no longer serviceable, and it was necessary to reconstruct with steel and reinforced concrete.



A wall painting showing the closing episode of Book II of the *Aeneid*—Aeneas carrying Anchises, who holds in a receptacle *sacra manu patrisque Penates*, and accompanied, *non passibus aequis*, by Iulus, in flight from the destruction of Troy. One of a number of pictorial allusions to Roman legend and the Roman State among the wall surfaces uncovered during the campaigns of 1910-23 (Reg. IX, Ins. xiii, no. 5, next door to the entrance with checker-board pattern).



(Below) Reconstruction of the street front shown on the opposite page. Above the wide opening, the four large panels contain painted busts of four divinities, Apollo-Sol, Jupiter, Mercury and Diana-Luna; the left pilaster has Venus Pompeiana; that to the right, a festival of Cybele, with a niche containing a marble bust of Dionysus. One of the election notices on the left pilaster mentions *infectores*, dyers. The now open entrance reveals some of the successive phases of the rain of, first, pumice stones and then ashes from Vesuvius. Those inhabitants who managed to live through the rain of pumice stones were suffocated by the fine ashes, and their bodies lay in contracted positions among the lowest layers from that second phase of the eruption; while in a moist state these ashes formed molds of the dead bodies which enabled the excavators, when they realized

that they had come upon a cavity left by the disintegration of the flesh, to pour plaster into the gap and thus create a cast of the ancient Pompeian.





The Homeric House (Reg. I, Ins. vi, no. 2), decorated in the latter part of the first century B.C. with an elaborate ensemble of paintings, including a long series of episodes from the *Iliad*, of which twenty-five survive in varying degrees of preservation. The skillful restorers have succeeded in piecing together this scene from many fragments. Hector (*Iliad* 6, 399-496) bids farewell to Andromache, and little Astyanax is frightened by his father's helmet with its waving crest. The Greek names of the personages are in part decipherable.

A longer stretch (below) from the same frieze, as it appeared when it had just been recomposed from many fragments. The two Ajaxes are defending the body of Patroclus from Hector (*Iliad* 17, 233-318); here too the inscriptions indicate the Greek origin of the cycle of representations—an *Iliad picta*.





Relief frieze in Reg. I, Ins. vi, no. 4, originally part of the Homeric House, but detached from it at a late period in the life of Pompeii. A detail of the frieze in the shrine showing episodes from the *Iliad*, in ivory-colored free-hand stucco relief assisted by painting, against a light blue background (similar in effect to

the familiar Wedgwood pottery). Achilles is dragging the body of Hector (*Iliad* 22, 395-404; 24, 14-21). This frieze is datable with precision, since the wall surface below it was left rough, showing that the room was in process of decoration at the time of the eruption; it is a Flavian interpretation of the epic theme.

Terra-cotta Horse, First Century A.D.

(Museum at Old Corinth, Greece)



What this photograph reveals
Is a little horse on wheels,
Made by some Corinthian potter;
Nero was the Imperator.
(So it figures on the lists
Of the archaeologists.)

May we not suppose that this
Starts a metamorphosis?
For the horse has turned to steel.
First the leg became a wheel;
Bones developed to a chassis,
Eyes to headlights bright and glassy.
It is needless to insist on
Engine-heart and muscle-piston.
Pray continue as you please
Furnishing analogies.

While I recognize, of course,
Only God can make a horse,
It is flattering to feel
Only Man could make a wheel.

MORRIS BISHOP

By Wilhelm G. Solheim II

After three years of active duty in the U. S. Air Force (1943-46) the author studied at the University of Wyoming (A.B., 1947) and the University of California (A.M., 1949). Since the fall of 1949 he has studied at the University of the Philippines and since 1950 has held the post of Lecturer in Anthropology at the University of the East, Manila. He is also Librarian and Curator of "The American Historical Collection" in Manila. Several reports concerning Mr. Solheim's field work on various Philippine islands have appeared in The University of Manila Journal of East Asiatic Studies.

RELATIVELY LITTLE IS KNOWN about archaeological work in the Philippines except by a small group of specialists who were active in Southeast Asia before the war. About a dozen archaeologists were working in five countries, but only one in the Philippines.

The first scientific investigation was undertaken on Marinduque island in 1881 by ALFRED MARCHE, a Frenchman. He conducted a systematic exploration of burial caves and made a large collection of artifacts which he took back to Paris. The second exploration was more extensive. From 1922 to 1924 Dr. CARL E. GUTHE, then of the University of Michigan, worked throughout the central Visayan islands. Like MARCHE, he excavated chiefly burial caves or other types of burial sites. The collections he made are now in the Museum of Anthropology of the University of Michigan.

In 1926 the scope of Philippine archaeology was broadened with the discovery, in the area of Novaliches Dam, of the first neolithic sites. This led to active exploration of both Rizal and Bulacan provinces, and here were brought to light early palaeolithic sites, mesolithic

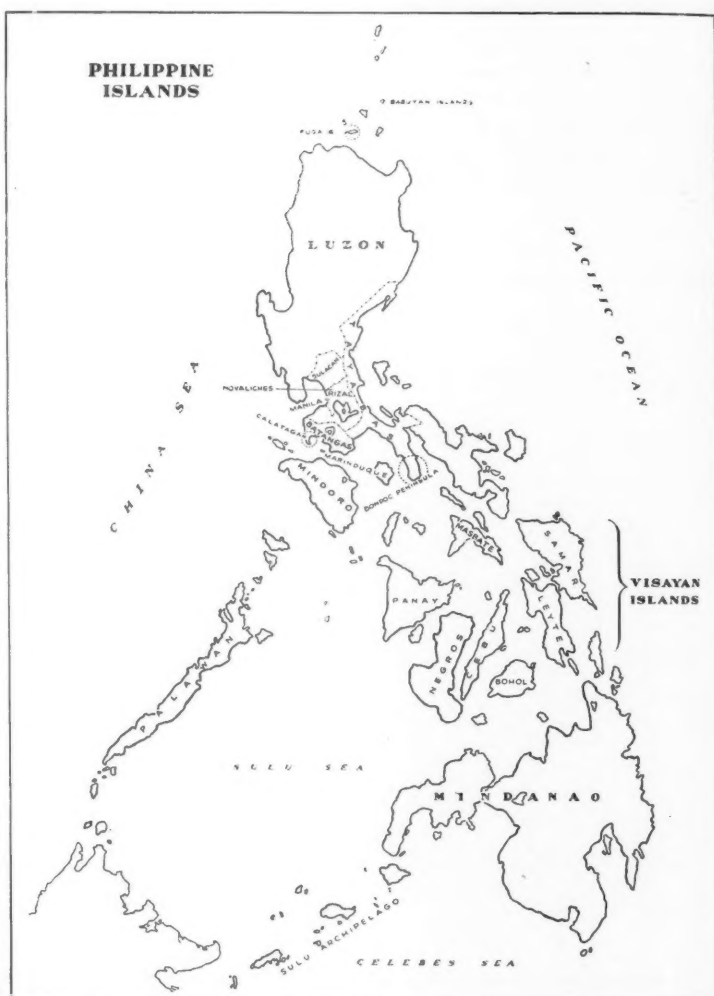


Fig. 1. Map of Philippine islands, showing sites explored by the writer and others.

sites and many more neolithic sites, as well as a number of the Bronze and Iron ages. This was mainly the work of Professor H. OTLEY BEYER of the University of the Philippines. From 1926 until the beginning of the war he worked in many areas, concentrating, however, in the provinces of Rizal, Batangas and Bulacan.

In 1940 DR. OLAV R. T. JANSE spent a few months in the Philippines and excavated on the Calatagan peninsula in southern Batangas. He has published his results in the *Harvard Journal of Asiatic Studies* (1941, 1944) and in the *Annual Report . . . of the Smithsonian Institution* (1946).

The explorations conducted since 1926 have radically changed earlier conceptions of Philippine history. During the first quarter of this century it was commonly believed that no stone age population had existed in the Philippines. The Novaliches find, however, dispelled all doubts as to its presence. Since that time additional material from all over the Philippine islands has established the presence of palaeolithic and mesolithic cultures as well as neolithic.

BEARERS OF A palaeolithic culture were probably in the Philippines by a quarter of a million years ago. Stone tools (FIGURE 2) practically indistinguishable from those found in Sangiran, Java, have been found near Manila in what is probably a Quaternary terrace of the same age as the Trinil of Java. Although no human skeleton remains have been found, the dis-

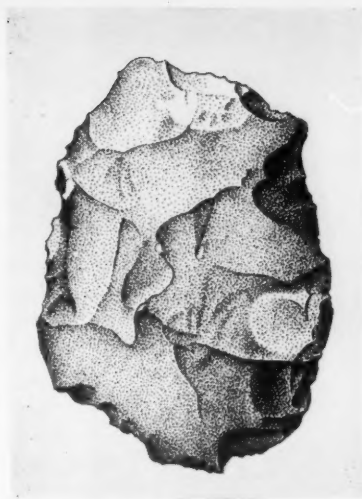


Fig. 2. Palaeolith from Batangas Province.

covery of contemporary mammalian fossils such as stegodon and rhinoceros suggests that such finds may some day be made.

Obsidian and flint microliths, characteristic tools of the mesolithic period, may have been present as early as 20,000 years ago. The tools are mainly scrapers, small knives and saws, burins, awls, and crude arrow or dart points (FIGURE 3).

About 4000 B.C. immigrants from the north of Luzon brought in the first early neolithic tools with the characteristic oval (in cross section) adze of the Walzenbeil culture. Although it existed on the mainland, pottery does not seem to have been present during the neolithic period in the Philippines, except possibly in its very latest stages. As a result, the classification of different stages and cultures of the neolithic period depends almost entirely on stone tools. Probably of greatest interest, in relation to surrounding areas, is the "Luzon adze." This ridged

adze developed its distinctive shape in Luzon about 2000 B.C., evolving (in cross section) from a cylindrical shape to a rectangle or occasionally a trapezoid. This adze, the ancestral type of the Polynesian tanged adze, spread both to New Zealand and into eastern Polynesia.

The second major migration of neolithic peoples came from Indochina and south China about thirty-five hundred years ago. Either these people brought with them a large amount of nephrite (jade) or it was brought in by trade with the mainland, as many finely ground nephrite tools, as well as cylindrical and discoid beads, have been found in Batangas, and there is no

Fig. 3. Obsidian microlithic arrow points from Rizal Province.

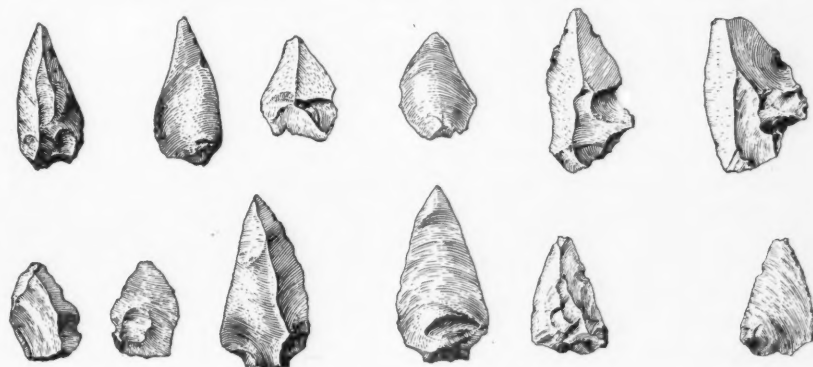




Fig. 4. (Above) Burial jar site on the Bondoc peninsula in southern Luzon, Philippines. In the right background can be seen four small pots beside a burial jar. To the left of this jar is an extended burial of an adult with that of a child in the rear corner.

Fig. 5. (Right) Two of the plain earthenware pots from the burial jar site (shown above) in southern Luzon.



known source of jade in the Philippines. Since the crude material has been found in the Philippines, as well as tools in various stages of manufacture, it is quite certain that most of these tools were made in the islands. After a time the import of jade ceased. The old tools were reworked and reused, with the result that the later nephrite tools are very small.

About the middle of this late neolithic period, a few socketed bronze celts found their way into the Philippines, but bronze always remained a rare material. Associated with these celts were a few glass beads of Bactrian origin. One type of bead is made of twisted layers of colored glass, while the other has a layer of gold foil between two cylinders of glass, one of which fits inside the other. Of the same origin are two silver

coins, found in different areas of Luzon. On the obverse each has a Greek-type head with crescent moon behind it; on the reverse is a horse.

Whereas the neolithic migrations came from the north and west, the Iron Age came in from the south. Brought by the Malays between 300 and 200 B.C., finds from this culture include, besides iron weapons and other tools, well developed pottery and locally manufactured glass beads and bracelets. In the Philippines the Iron Age had a second phase which may be called the Porcelain Age. Chinese and southeast Asian glazed stoneware and porcelain started coming into the Philippines about the ninth century A.D. The historic period begins only with the arrival of the Spaniards in the seventeenth century, although

various islands in the Philippines are mentioned in the old Chinese histories, and a few native books escaped the usual Spanish destruction of local works.

RECENT INVESTIGATIONS by the writer have included excavations of burial jar sites in three different areas. During the Iron Age such jars were commonly used and the practice was widespread in southeast Asia and Oceania. One particular style of jar burial, however, seems to be less general, and confined to fairly

limited areas. In the Philippines this burial jar complex is dated roughly from 200 to 800 or 900 A.D. and appears to be older than other styles of jar burial, which may be descended from it. While there are variations, the usual characteristics are as follows: the sites are always in view of the sea, often close to the shore; a relatively large number of jars is found in a single area and all have some kind of cover; almost always some artifact is placed in the jar. At northern Philippine sites (Babuyan islands) the jar is often surrounded by a cairn (FIGURE 10), while in the south (southern Tayabas) the jars are in the ground. In the north a second jar is used as a cover, while in the south the cover is a large, flat stone. Finally, in the north the burial jar is alone, while in the south each jar has about four small pots associated with it.

The first site excavated was on the Bondoc peninsula in southern Tayabas, which is in the southern part of Luzon (see map, FIGURE 1). As is customary, this site (Tumagudtud) was in view of the water, as were several others investigated in neighboring areas on Bondoc. The Tumagudtud site was on the edge of a living area which had apparently been occupied for some time. Besides the thirteen jars in the area excavated, there were two primary extended burials (see FIGURE 4), one of an adult male with a long iron blade lying along his right arm, and the other a young child with a group of large cowry shells by its left knee and five shell bracelets around its right forearm. There was also an intrusive secondary burial without artifacts. With each of the jars there were several small pots,

Fig. 6. Vessel with perforated ring stand from the same site. Still bright red, it has lost the spout.



Fig. 7. Remains of a close flexed burial in a large burial jar. The limestone lid and the neck of the jar had broken and fallen, crushing the skeleton to the bottom of the jar.

some plain (FIGURE 5) but others finely made and of considerable interest. There were a few angle pots, several with perforated ring stands and two with a bright red slip, one of these a spouted vessel (FIGURE 6). In addition to the bones (FIGURE 7), some jars contained many red and yellow paste beads, a few blue glass beads and fragments of one or two blue glass bracelets. In others were iron spear points (FIGURE 8) and in one also a perforated shell (?) disk.

THE SECOND SITE investigated was on the island of Masbate. This site, though within view of the sea, was several miles from the shore. Here all signs of human remains had disappeared from the jars, although beads were still to be found. In two of the jars were found elliptical stones similar to potters' anvils as used in the paddle-and-anvil method of pottery manufacture. (A local potter immediately identified one as a *dobol*, or potter's anvil.) With one of these was found a grinding stone similar to a cylindrical *mano*, well worn on one side. Small angle pots, most of them with

Fig. 8. Four iron spear points from burial jar and long blade from extended burial seen in the background of Figure 4.



perforated ring stands, were found, but these were different in style from those excavated at San Narciso (on the Bondoc peninsula).

On Fuga island, to the north of Luzon, were several sites, all approximately contemporary. No tools were found in the jars, but some had beads similar to those from Masbate and San Narciso, and others contained plain bronze (?) finger rings and a small stone disk. Most of the jars are native earthenware, but some are of stoneware (FIGURE 9) and these came from south China or Indochina, dating from late Sung or early Yuan times (about the tenth century). Unlike the jars in the south which had limestone covers, these all had earthenware jars for covers and some were buried in coral cairns (FIGURE 10).



Fig. 9. Late Sung or early Yuan stone-ware jar, of Asian manufacture, which was used as a burial jar on Fuga island.

EXCEPT FOR THE AREA around Manila and in Rizal, Batangas and Bulacan provinces and parts of the Visayan islands, most of the Philippine islands is still virgin territory for archaeological field work. The broad pattern of Philippine prehistory has been worked out by Professor BEYER, but now this framework must be verified and brought into focus, and the details must be filled in.

ADDITIONAL READING

- H. OTLEY BEYER, "Outline Review of Philippine Archaeology," *The Philippine Journal of Science* 77 (1947) nos. 3 and 4
H. OTLEY BEYER, "Philippine and East Asian Archaeology, and its Relation to the Origin of the Pacific Islands Population," *Bulletin of the National Research Council of the Philippines* No. 29 (1948)

Fig. 10. Coral limestone cairn on Fuga island (behind figure), containing a burial jar. These cairns are common on several of the Babuyan islands.



In the spring of 1950 the University of Pennsylvania Museum initiated excavations at a site which has been identified as the ancient city of Gordion. It lies some seventy miles southwest of Ankara, the capital of Turkey. The results of the first campaign were reported by the expedition's director, Rodney S. Young, in *ARCHAEOLOGY* 3 (1950) 197-201. Work was continued in 1951 and 1952, and this year the expedition was again in the field. In the present article Dr. Young shows how evidence from excavation is carefully studied and coordinated with recorded historical facts to supply a missing chapter in a city's history.

MAKING HISTORY AT GORDION

By Rodney S. Young

SEPARATED FROM THE MAIN CITY MOUND AT Gordion by a low flat trough nearly a hundred meters in width lies a smaller mound which rises at its center to a peak about twenty-four meters in height. Falling away north and west from this peak are long low ridges which approximately follow the contour of the main mound, always separated from it by the trough (FIGURE 1). The German excavators of Gordion in 1900 interpreted this trough as the ancient course of the Sangarius river, which has since shifted its bed and flows to the west of the main mound. This interpretation is strengthened by a statement of

Quintus Curtius (*Hist. Alex.* III, 1, 2) that the river flowed through the city:

Gordium est nomen urbi, quam Sangarius amnis interfluit.

The smaller settlement to the southeast thus seems to have been a suburb of the city on the opposite side of the river; and perhaps it is significant that the main city gate lies on this side of the mound giving access, one may suppose, to a bridge which connected the two parts of the town.

However that may be, the smaller mound has always been something of a puzzle. The long ridges at either

Fig. 1. Air view of Gordion, looking northward. Main city mound (A) at bend of river, lesser mound (B) to right. The trough between may be an old bed of the river.





Fig. 2. The lesser mound at Gordion, looking southeast from the town site. The dump marks the level of the sixth-century building.

side give the appearance of accumulated deposit from a settlement, while the high rounded central peak more resembles a tumulus over a grave. The brothers KOERTE in 1900 hoped to find here the temple of Zeus in which was housed the wagon of Gordius with the famous knot cut, according to tradition, by Alexander the Great. A few large roughly trimmed blocks of stone lay on top of the mound, but these could not be fitted together into any sort of wall, and no foundations were disclosed by excavation. The top of the mound proved to be made of nearly pure clay which yielded only a few potsherds of the coarsest kind, and the German excavators apparently came to the conclusion that the mound was a natural hill.

IN THE SUMMER of 1951 a new test pit was sunk in the summit of this mound by the excavators from the Museum of the University of Pennsylvania. The shaft was carried to a depth of nearly five meters and it was found that the top of the mound is entirely of clay in which may be observed striations of brown, green and gray; but these striations, together with the presence of an occasional coarse potsherd, indicate that the entire mass was artificially heaped up and is not a natural hill as supposed by the KOERTES. In digging the city mound, too, it was found that at some time in the sixth century large areas, if not the entire surface

of the mound, had been overlaid by a thick layer of clay (1.50 to 4.50 meters in depth). The surface of this clay stratum lies about five meters below the present surface of the mound; and here again the German excavators were deceived into thinking that they had reached virgin soil.

The enormous artificial deposit of clay on top of the lesser mound, then, had in all probability been heaped up at about the same time; and the latest potsherd found in the trial pit, a fragment of a banded lydion (so-called because the shape is peculiar to Lydia) could in fact be dated approximately to the middle of the sixth century B.C. The top of the smaller mound is evidently a tumulus, presumably heaped over a grave at some time in the latter half of the sixth century or even later. The lower part of the mound, however, with its low curving ridges, obviously cannot have been any part of a grave tumulus, and the conclusion was forced upon us that at some time in the sixth century this part of the city was abandoned and a large grave tumulus heaped over its central area.

A new cut was therefore started on the southern slope of the lesser mound at approximately the level of the sixth-century city on the main mound opposite and at a level where traces of ash and of broken sundried bricks, reddened by fire, could be observed at the surface (FIGURE 2). These traces proved to be the

edge of a large building constructed of crude brick. Our excavator, **MACHTELD MELLINK**, was able in the time at her disposal to uncover a sizable section of it. Much, however, remains to be done, and the suggestions offered here are subject to change in the light of further digging.

THE BRICK BUILDING is so oriented that the corners of the rooms are approximately at the cardinal points, as are roughly those of the buildings of the sixth-century level on the city mound. The one large room thus far entirely excavated is subdivided by light cross walls into three sections; part of another room or entrance adjoining it was uncovered (plan, **FIGURE 3**). Wall A seems to be the only outside wall of the building yet uncovered; the others still lie buried in the undug tumulus or have fallen away down the slope to the southwest. The plan of much of the building may still be recovered by further digging. Following the walls and the floor inward against the slope of the tumulus, our trench, about twenty meters in length, attained great depth at its inner end (wall D). Here the depth from the surface to the floor of the building was over six meters, and the crude-brick walls were found standing to a height of 4.20 meters, representing the basement and upper story of a building which had been destroyed by a violent conflagration and then buried under the tumulus.

The walls are of sun-dried bricks (0.48m. in length, 0.28m. in width, and 0.10m. thick), laid in even horizontal courses of stretchers interrupted by an occasional course of headers

Fig. 4. The west corner of the building, showing slots in the walls for wooden posts, and wooden beams set into the earth floor. At the lower left, the bedding stone for a wooden pillar.

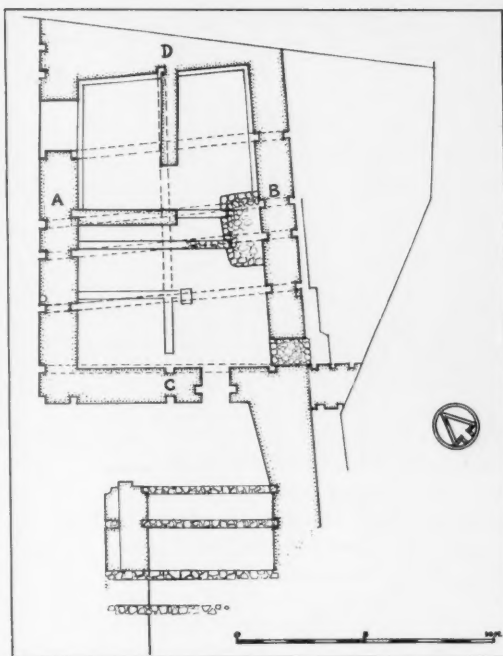


Fig. 3. Plan of the burned brick building on the lesser mound. Dotted lines indicate wood construction. Scale in meters.

(bricks laid side to side, their ends extending into the thickness of the wall). The bricks were laid in a bonding of mud mortar. The unusual thickness of the walls (about 1.50m. on the average) may be due to the absence of any stone foundation or socle; this thickness is about twice that of Gordion's ordinary brick walls bedded on stone socles. These walls, however, were strengthened by a framework of horizontal wooden beams and vertical wooden posts set into the surface of the brickwork and fastened together at the joints by large iron nails. Bits of charred wooden beams and posts still remain in the slots, which were reddened and hardened by the burning of the wood (**FIGURE 4**). The slots were about thirty centimeters square in section, as must have been the beams that fitted snugly into them. In some cases where the inner corners of the slots had been filled in or beveled with mud mortar, one must assume round or

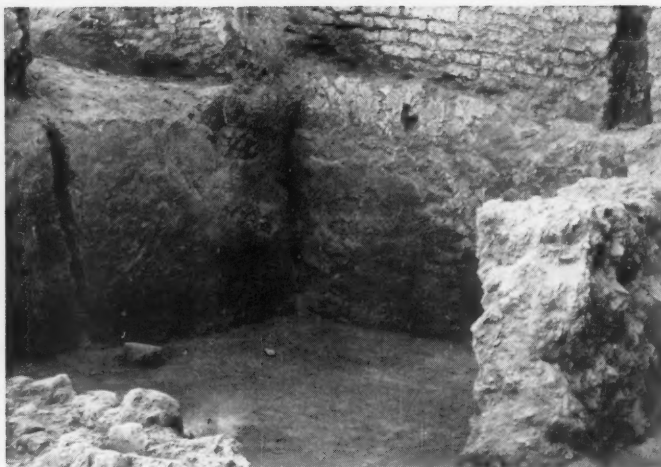


Fig. 5. The north corner, showing the basement, with its stuccoed mud walls and, about 7 feet above the floor, the ledge where the ceiling beams rested, with the crude-brick construction of the upper story above. Second-story entrance appears at the upper left corner.

half-round posts. The wood was certainly of a coniferous species, probably pine and cedar; the profusion with which it was used suggests that the country was well wooded at the time.

Into the hard-packed earth floor of the basement had been set wooden beams, laid in slots which were lined at the bottom with small stones (FIGURE 4). These beams probably served to carry a wooden floor; in fact, some traces of floor boards were found near the west corner.

Although only scraps are preserved, it is possible to estimate the lengths of the wooden beams and posts. The dimensions of the whole chamber are about 11.50 meters by 7.00 meters; exact measurements are hardly possible as the building was apparently laid out crooked in the first place and became more crooked with the passage of time and as a result of its destruction by fire. As mentioned above, this area was subdivided by cross walls into three smaller sections. These walls, together with a girder supported on the post or column indicated by the large stone slab

Fig. 6. Looking into the building through the southwest door. Note the signs of burning on the wall face at the right.



embedded in the floor (FIGURE 4) near the center of the lower half of the room (see plan, FIGURE 3), form a grid system of supports which nowhere has a span of more than three meters. Allowing for overlap at either end, the beams must have been 3.80-4.00 meters long.

The vertical posts set in the brick walls must have been approximately 2.20 meters high (the height of the basement at the inner end). At this height above the floor the brick walls become thinner, leaving a projecting ledge about twenty centimeters wide on their inner faces, on which could be set the ends of the ceiling beams (FIGURE 5). Here, too, at the level of the second floor, horizontal wooden beams were set into the walls and no doubt nailed to the tops of the basement posts and to the bottoms of the posts in the walls of the upper story. The supporting ledges run around three sides of the inner room.

On the fourth side the partition wall may have served to support the ceiling; but as the ledges do not extend beyond the cross wall we assume an upper story only for the inner end of the building.

As the plan shows, the walls were strengthened on both faces by wooden framework. It is likely (though we have not yet been able to expose evidence for it) that the inner and outer supports were tied together by short beams running through the wall. When the building was finished the brickwork and its supporting wooden frame were covered by a coat of mud stucco,

which is still in place on the inner face of wall D (FIGURE 5). No doubt the outer faces of the walls were also covered with stucco which could be renewed as often as necessary to protect the crude brick. The wooden frames of doors and windows must have remained visible; traces of the wooden jambs and sills have been observed. The lower story was an underground basement at its inner (northeast) end and apparently a semi-basement at its outer.

Access to the basement rooms was given by two doors near and at the south corner (FIGURE 6). At some time the door at this corner was blocked with rubble. Both doors had sills about sixty centimeters above floor level, and there must have been a couple of steps, probably of wood, connecting the doors with the floor level. The blocking up of the second door suggests alterations made during the lifetime of the building; wall B gives further evidence of such alteration or repair. Here a long stretch is roughly built of

plano-convex bricks in the shape of half cylinders, obviously a patch or repair if not an alteration in the original plan. Outside the door, too, the face of wall C had been buttressed by a mass of brickwork which makes it wedge-shaped in plan. In the area outside this wall, which is badly preserved, there seems to have been another room where four beams set in the earth suggest wooden flooring.

Communication between the two stories may have been by a staircase resting on a platform of stone rubble (1 m. wide and 2.45m. long) set against wall B in the basement. Here the wall leans inward to such a degree that it was not possible to clean all the debris away from its lower face. Removal of some of this might reveal traces of a wooden stairway leading to the upper floor.

Since the building stood on sloping ground, there

was direct access to the upper story from the outside. A wide (1.85m.) doorway opening through wall A must have been an outside entrance to the upper level. A second doorway in the opposite wall (bricked up during the life of the building) had at one time given access to another room which had no basement. Beams laid in the earth at the level of the main story probably carried the wooden floor of this room or annex. The blocking up of both doors in wall B, one at the level of the basement, the other at the upper level, might suggest that this part of the building had been abandoned,

were it not for the fact that most of the finer pottery was found in the annex.

At the inner end of our trench wall D is preserved to a maximum height of 4.20 meters from the lower floor. As we have seen, the basement was 2.20 meters high. The upper story must have been slightly higher. Although the walls are not preserved to their full height, fallen roof-beams were found more or less in place. These had apparently burned

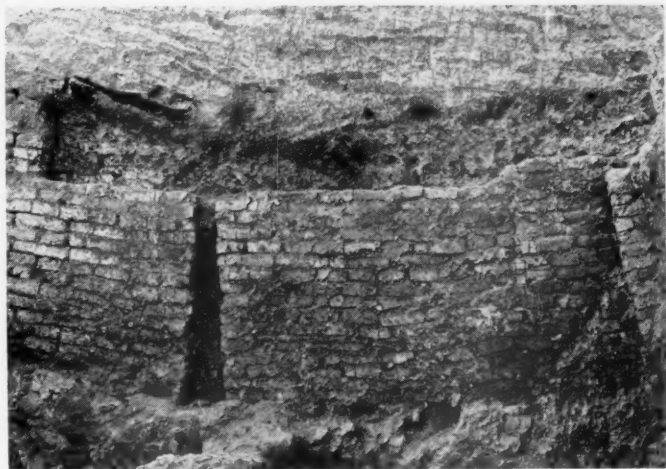


Fig. 7. The scarp at the inner end of the building, showing the burned and broken roof beams and over them the striated clay filling of the tumulus.

through and given way at the center under the weight of the roof. In the scarp (FIGURE 7) may be seen the ends of the roof-beams, slanting downward toward the break at the center. As the outer ends of these beams lie nearly a meter above the top of the brick walls as preserved, we may assume a total height for the upper story of approximately three meters.

As may be seen in the same picture, the burned debris of the building is immediately overlaid by the clay of the tumulus. The striations of green, gray and brown clay are clearly visible. Each patch must represent a load of filling brought to build the tumulus, and the indiscriminate way in which they are intermingled suggests that filling was being brought from three sources at the same time. As there is no intervening layer between destruction debris and tumulus filling, it would seem that the tumulus was heaped over the mound al-

Fig. 8. (Above) A banded lydion from the burned building. (Below) A skyphos, an Anatolian vase showing the influence of Corinth. Scales in centimeters.



most immediately after the destruction took place.

The rooms were choked with earth and broken bricks, almost throughout reddened by fire. At the surface, and immediately under the tumulus clay, lay a stratum of charred wood which had supported the roof. Beneath the charred layer there was a thick deposit of decomposed and burned brick, together with wood both charred and unburned. At a lower level beneath this mass, at the inner end of our trench, lay a second stratum of charred wood and beams, doubtless the remains of the floor of the upper story. Traces of another layer of wood, already mentioned, probably represented the basement floor. The vertical posts in the walls had been thoroughly burned out; the horizontal beams at the two floor levels rather less so.

MANY FRAGMENTS OF large coarse clay vessels were found in the debris over the basement

floor; they suggest that these rooms had been used for storage. Most of the finer pottery was found in the annex at the southeast, but some also in the basement rooms. These finer vases were usually in small groups above the fallen floor of the upper story. Their position, with relation to that floor, and their groupings suggest that at the time of the destruction they had been in the upper rooms, perhaps on tables or on wall shelves. Most of these vases were lydions, banded or plain, like that in FIGURE 8, above. These are dated by their shape around the middle of the sixth century. It will be remembered that a fragment of a similar banded lydion was found in the test pit at the summit of the tumulus, and this again indicates that the heaping of the tumulus must have followed closely the destruction of the building.

The lydions were the most common type of vase in the building; twenty-one nearly complete examples were found, and fragments of many more. A roughly glazed skyphos of Protocorinthian shape (FIGURE 8, below) but with a high flaring foot suggests that Anatolian potters were not immune to Greek influence, though rather behind the times. We have as yet no positive indication as to whether these vases were made at Gordion or imported. Next in popularity to the lydions were crude lekythoi with raised ring around the neck, coarsely painted with dull streaky glaze (FIGURE 9, top). These are paralleled in east Greek cemeteries of the mid-sixth century. Ten nearly complete examples were found, and fragments of many others. Some globular jugs with cut-away mouth are of characteristic local fabric. One (FIGURE 9, center) is of the gray ware with polished surface which formed the bulk of the finer local pottery at Gordion during Phrygian times. A second (FIGURE 9, bottom) is of the same shape, made from hard-baked buff clay with polished surface and with triglyphs, zigzags and chevrons incised on body and shoulder. This incised ware, too, is characteristic at Gordion, and it is good to find an example in a datable context.

The pottery dates the destruction of our building at about 550 B.C. The conflagration seems definitely not to have been accidental. Throughout the burned debris, both inside and outside the building, were many arrow points of bronze and iron, altogether well over a hundred. Some of these (FIGURE 10) had their points bent or broken off as though they had struck a hard surface in full flight. One had a bit of the wooden shaft still embedded in the socket. Though there is considerable variation in size and shape, two main types of arrow points may be distinguished: the flat, two-

flanged head with central spine, and the triangular three-flanged variety. Many of the first type have a barb projecting near the base. Both types were found in quantity inside and outside the building, so that it is not possible to assign one kind to the defenders and the other to the attackers.

The great number of arrow heads suggests that the fire was preceded by a battle; two human skeletons, badly burned and crushed under fallen debris inside the house near the door in wall C seem to prove it—these were victims killed or wounded in the battle and then buried in the falling debris of the burning building. The sequence of events is clear: a battle followed by the fire, then the abandonment of the site and the heaping of a tumulus over the ruins. Presumably the defenders lost the battle, else their building would not have been burned. All these events are to be dated around the middle of the sixth century.

CASTING ABOUT FOR A historical framework into which to fit this unrecorded episode, one thinks of the war between Croesus, King of Lydia, and Cyrus the Great, the Persian king. The border between their realms was the Halys river, a boundary which had been agreed upon some years before by the Lydians and the Medes. Gordion and Phrygia, lying to the west of the Halys, were therefore a part of the Lydian kingdom. The story of the war is given by Herodotus in his first book: alarmed at the increasing power of Cyrus and misinterpreting a prophecy of the Delphian oracle that by making war on Cyrus he would destroy a mighty kingdom [for the story in detail, see "The Delphic Oracle" by RICHARD HAYWOOD, *ARCHAEOLOGY* 5 (1952) 110-118—Ed.], Croesus gathered his army and marched against Cyrus; the army crossed the Halys and on the other side at Pteria engaged in battle with the Persians. The outcome was indecisive and Croesus retired, deciding, since the season was late, to summon his allies and renew the war in the spring. He returned to Sardis where he disbanded his army, at the same time sending out messages to his allies to come to his help against the Persian in the spring. Cyrus, however, took this opportunity to attack; after a brief delay he marched on Sardis, where he caught Croesus by surprise with only his Lydian cavalry remaining by him, since the rest of the army had already been disbanded. The Lydian cavalry was de-

Fig. 9. (Top) Lekythos. The handle is missing, but its stump may be seen at the right. **(Center)** Jug with cut-away mouth, of coarse local fabric. **(Bottom)** A similar jug of local fabric, with an incised decoration.



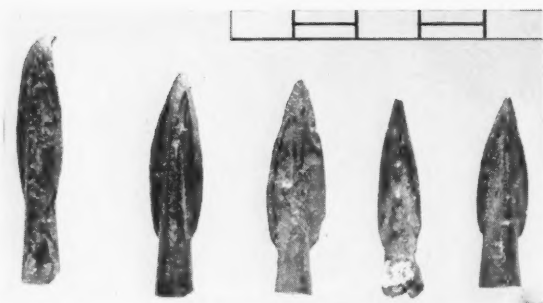


Fig. 10. (Left) Bronze arrow points from the burned building. The tip of the one at the left bent over; the one at the right three-flanged. (Right) Iron arrow points, one bent. Scales in centimeters.



feated, and after a short siege Sardis was captured; thus ended a mighty kingdom.

These events took place in 547-546 B.C.; Herodotus mentions only two battles, those at Pteria and Sardis. But there must have been other minor engagements in the campaign. Cyrus could hardly have continued the long march from the Halys to Sardis, deep in enemy territory, without mopping-up operations against the Lydian garrisons along the way. Gordion lay on an important route—perhaps the one taken by Cyrus himself—and must have been held by a garrison. May we hazard a guess that the battle at Gordion, which took

place at about this time, was part of Cyrus' campaign against Croesus in 547-546 B.C., and that the Lydian garrison held out to the last against the invader in its barracks of crude brick just outside the town? Perhaps some important personage, a prince or a general—Lydian, Phrygian or Persian—was killed in the action and buried on the spot, with a tumulus befitting his rank heaped over the grave as a memorial to him and to an event otherwise unrecorded by history.

Winter Issue of ARCHAEOLOGY—some highlights:

Art and Archaeology at the Cleveland Museum of Art—the first of a series of picture articles on American museums and their treasures;

New Excavations at Boghazköy—a report on the famous capital of the Hittites, by HANS G. GUETERBOCK;

Sea-Digging—how divers salvage ancient ships and their cargoes, by LIONEL CASSON;

King Nestor's Palace—new discoveries at old Pylos, by CARL W. BLEGEN;

Surkh Kotal—the excavation of a Late Hellenistic temple in Bactria, described by DANIEL SCHLUMBERGER;

and other articles, news of archaeological events and book reviews.

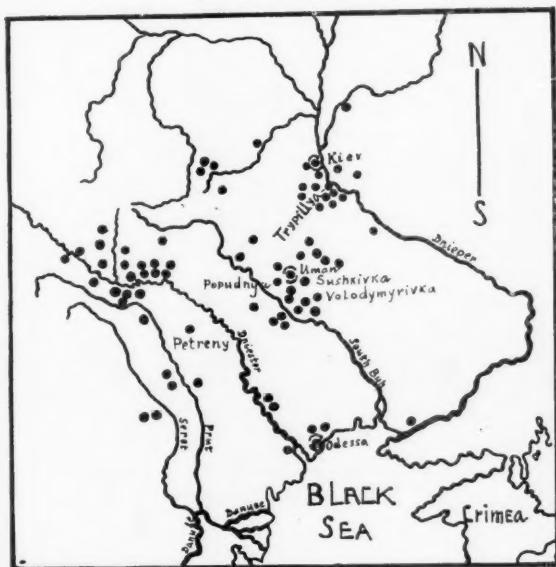
STONE AGE DWELLINGS IN THE UKRAINE

By Neonila L. Kordysh

The author received her university training in Kiev, Ukraine, and from 1928 worked in the Archaeological Museum at Kiev, first as a student, then as an assistant. Later she became a research archaeologist both at the museum and at the Institute of Archaeology of the Ukrainian Academy of Sciences, where she remained until 1943. From 1928 to 1930 Dr. Kordysh participated in excavations at the ancient Greek site of Olbia. She also took part in several excavations of ancient Slavonic sites, Scythian mounds and Trypillian Culture settlements conducted by the Institute of Archaeology, and from 1934 to 1939 she excavated at the Trypillian settlements of Kolomyshchyna and Volodymyrivka. An extremely interesting dwelling (No. 3) discovered by the author at the latter site is discussed in this article. During 1944-45 Dr. Kordysh worked at the Institut fuer Vor- und Fruehgeschichte at Hoechstadt, Bavaria, and during 1946-47 as cataloguer of archaeological collections for the American Military Government in Munich. In 1949 she was elected a member of the Ukrainian Academy of Arts and Sciences in America.

LATE NEOLITHIC MAN HAS LEFT FEW REMAINS OF MONUMENTAL ART or architecture. His life was simple, his occupations agricultural and pastoral. The chief evidence for the way in which men lived in these early times is furnished by their settlements and the dwellings of which these were composed. Nowhere have such dwellings and the details of their domestic arrangements been more completely revealed than

Fig. 1. Map showing the most important Trypillian culture settlements.



by the excavation of settlements of the Trypillian culture in the Ukraine (FIGURE 1). The culture was named after the village of Trypilla, in the Kiev district, where this late Neolithic civilization (third-second millennium B.C.) was first discovered by the archaeologist V. KHVOYKO in 1896. Excavating for several years in the Kiev and Podilla districts, he found two types of structures. Those of the first type, built of clay strengthened with wood and twigs, were usually arranged in a circle on loess plateaus. Since he found painted pottery and burned bones among their ruins, he assumed them to be burial or ritual places. The second type of structure which he found was the "pit house." These rectangular or oval pits (two to four meters long by two meters wide) were dug one to two meters into the loess. As they contained remains of ovens and hearths, as well as fragments of bone, shells and painted pottery, they were believed by KHVOYKO to be dwellings.

The interest aroused by these discoveries resulted in considerable controversy among archaeologists as to the true purpose of the various structures, and in order to settle the problems which had arisen, large-scale ex-



Fig. 2. (Left) Characteristic neolithic (Trypillian culture) were found at Volodymyrivka before 1940. The black spirals are painted on a yellow ground.

cavation was essential. This was begun in 1934 at Kolomyshchyna I, near the village of Trypilla, and continued through 1938. During these five years, thirty-nine houses were unearthed and investigated, and through study of the Trypillian way of life, it was established that the clay structures were for habitation, not for ritual purposes. The deciding factor was the discovery of remains of ovens in these buildings. The houses were rectangular, of various sizes (9.6m. x 4.50m.; 15m. x 5m.; 20m. x 6m.; 21m. x 7m.), and consisted of several rooms. Usually each room had an oven, but some, probably storerooms, had none.

THE BASIC building materials were wood and clay. The walls, made of wattled twigs and oak poles, were covered on both sides with thick layers of clay mixed with straw. The floors of the houses were extremely thick. Usually a layer of logs formed a foundation; then layers of clay (0.10m. to 0.15m. thick) were added, each one baked by having a fire built on it. Sometimes slabs of clay were baked outside the house and then laid on the floor inside. Such floors, consisting of several waterproof layers, protected the dwelling from dampness. The gabled roof, which can be seen on a clay house model unearthed at Kolomyshchyna II, is assumed to have been of straw or reeds. Besides using wood and clay for building the walls, the Trypillians constructed their ovens of twigs which they plastered with clay. Slabs of baked clay were used for the foundation of the oven and for the sleeping places. Circular clay structures with polished and red-painted surfaces, slightly raised above the floor, probably had ritual sig-

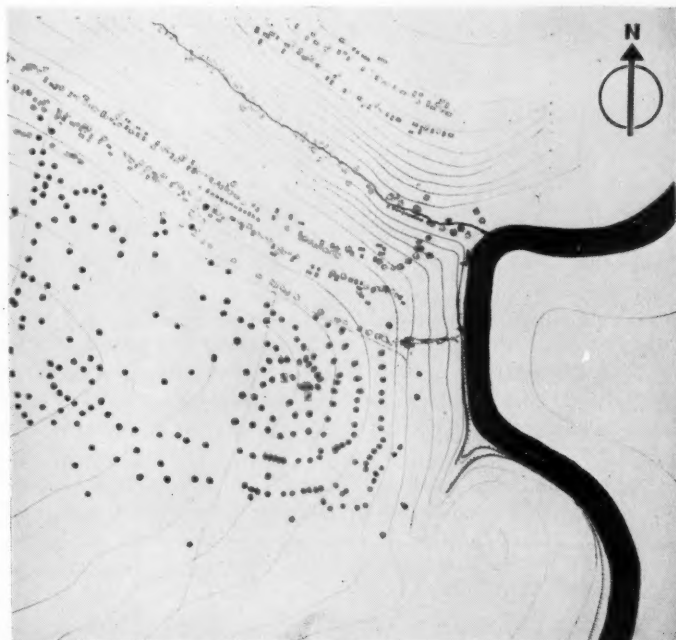


Fig. 3. (Below) Plan of Trypillian culture settlement uncovered at Volodymyrivka, on the bank of the Syniukha River (a tributary of the South Buh).

nificance for the people of the Trypillian settlement.

The objects found in the houses at Kolomyshchyna I were typical of the culture. There were stone mills near the oven, mattocks of deer horn for cultivating the soil, flint tools—scrapers, needles, knives. There was painted pottery of various shapes—jars for water, for food storage and for cooking. The cooking vessels were usually found in the oven or close beside it, the other pottery along the opposite wall. Other finds were clay figurines representing women and animals, clay spindle whorls, loom weights and sinkers for fish nets.

After having studied the ancient settlements of Kolomyshchyna I and II of the Dnieper Basin, the archaeologists transferred their investigations to Trypillian sites of the South Buh Basin. The systematic

Fig. 4. The plan of Dwelling No. 3, a clay house excavated at Volodymyrivka.

Key to plan:

- A cross-wall
- B ovens
- C sleeping place
- D cross-shaped platforms
- pottery sherds
- millstones
- clay figurines
- flint tools
- votive vessels
- clay spindle whorl
- litter of animal bones
- mattocks
- fragments of clay house model

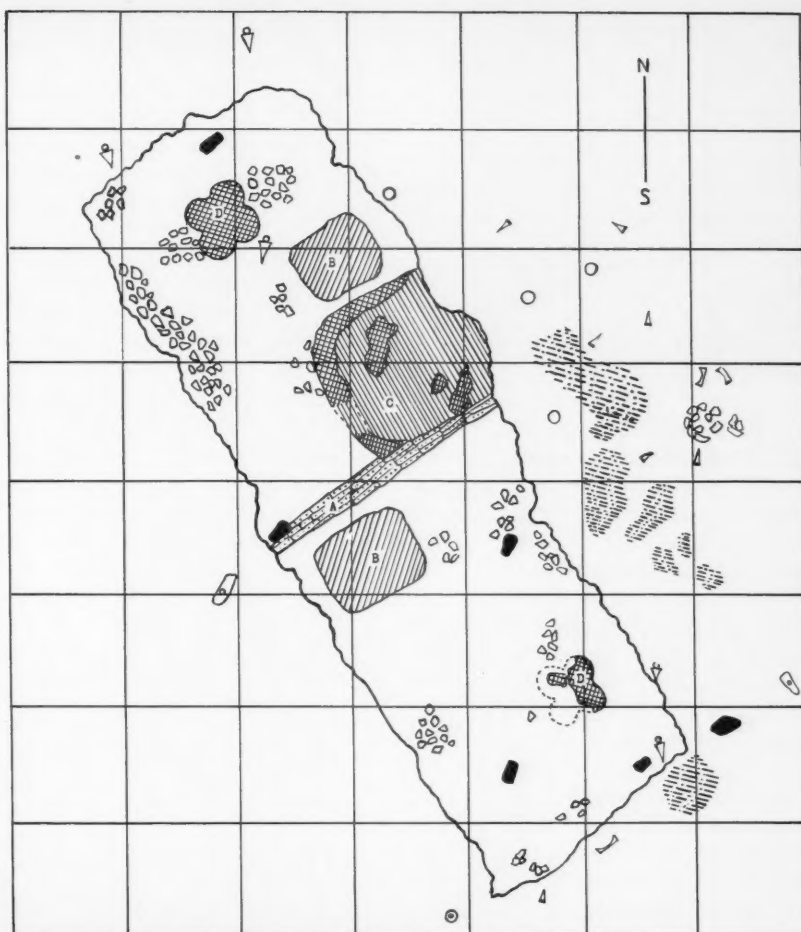


Fig. 5. (Below) General view, looking southward, of Dwelling No. 3 after it was cleared. One of the two cross-shaped platforms is visible in the foreground.



excavation of a Trypillian settlement near the village of Volodymyrivka, Uman District, took place in 1940. In 1928, 1936 and 1939 three dwellings had been uncovered, and they produced typical Trypillian pottery (FIGURE 2). Volodymyrivka is the most interesting Trypillian settlement of the South Buh Basin. Covering an area nine hundred by eight hundred meters, it is the largest Trypillian settlement known at present. Here more than two hundred dwellings were found arranged in a definite system, forming several concentric circles or ovals (FIGURE

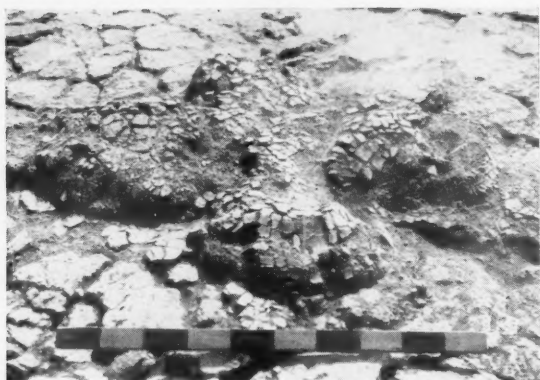


Fig. 6. Detail of Dwelling No. 3 at Volodymyrivka, showing the cross-shaped platform at its northern end.

of baked clay mixed with straw, 0.08-0.09m. thick. It consisted of three layers, each 0.03m. thick which had been baked at 200-300° Centigrade. On the under side of the clay could be seen impressions of the split wood which had formed the base of the floor.

THE INVESTIGATION of these dwellings made it clear that the building technique at this settlement was very like that of other Trypillian settlements, but in addition the Volodymyrivka dwellings had many unique features. The most important and interesting was a cross-shaped platform of pure clay, with a smoothed surface, which was built on the floor (FIGURE 6). Such platforms in the form of a cross, which were probably domestic altars, were found in both

3). A similar arrangement of the houses, which is typical of the Trypillian culture, was observed in the settlements of the Dnieper Basin (Kolomyshchyna I and II, and others).

An extremely interesting structure at Volodymyrivka was a clay house, Dwelling No. 3, situated in the middle of the settlement (FIGURES 4 and 5). It was rectangular, 14.30 m. by 4.50 m., divided by a cross-wall into two rooms (7.70 m. and 6.60 m.). In each room were found remains of an oven measuring about 1.50 m. square at the base. In the smaller room, between the partition wall and the oven, was a well preserved rectangular clay structure (2.60m. by 2.10m.) with a smoothed surface, raised 0.20m. above the floor, probably a sleeping place. The floor of the dwelling was made

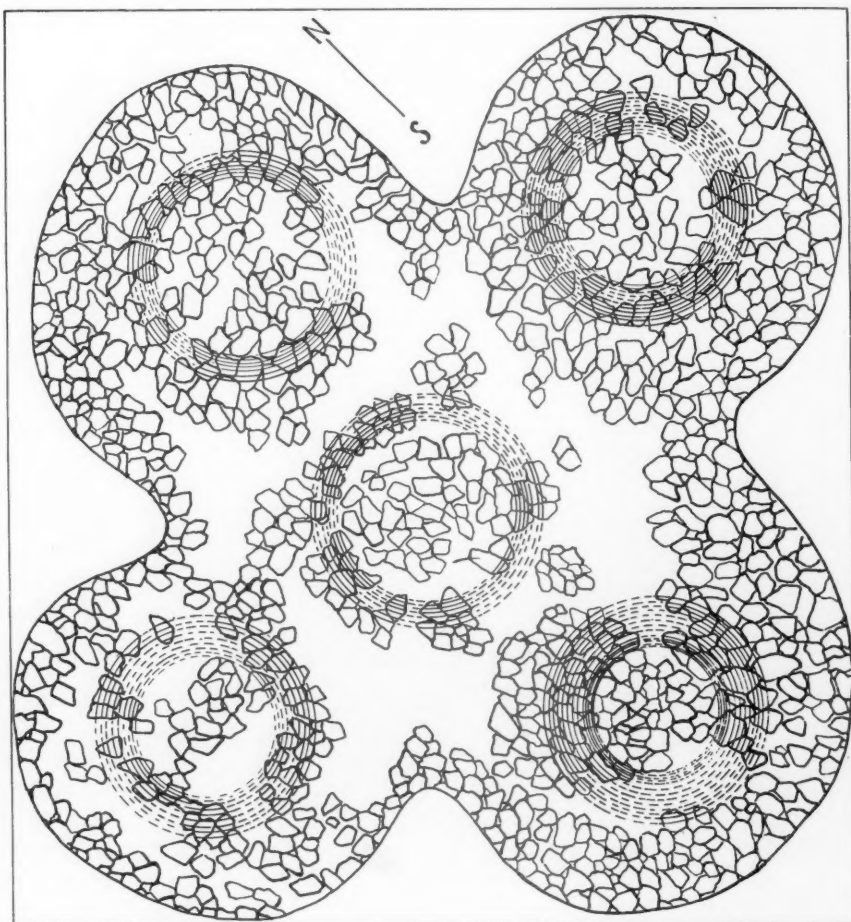


Fig. 7. Drawing of the cross-shaped platform with the concentric circles on each lobe.

rooms of Dwelling No. 3. In the smaller room the platform (1.25m. x 1.30m. and 0.10m. high) was near the wall opposite the cross-wall. The rounded lobes of the cross correspond roughly to the cardinal points and each was decorated with concentric circles apparently incised with a compass (FIGURE 7). On each lobe of the cross the number of circles is different: they are seven, nine, eleven and thirteen, and in the center there are seven. The cross was partly damaged by the falling of the house walls, and its surface was split into small fragments. A similar, older cross was eventually revealed under the first one, showing that the latter was a rebuilding of the original structure. Beside the altar to the west and east were discovered fragments of painted pottery, among them a so-called binocular vase (FIGURE 8). The purpose of such vessels is still unexplained. Among many hypotheses, the most believable is that they were stands for small bowls or lamps, and could be used for cult rites. Along the wall opposite the oven groups of painted pottery of various shapes and kinds were found. Near the oven were cooking pots.

In the second room the cross-shaped altar, only partially preserved, was located near the southeast corner. It was also decorated with incised concentric circles. Near the altar and the oven were found fragments of pottery and grinding stones (see FIGURE 4). Among the numerous ob-

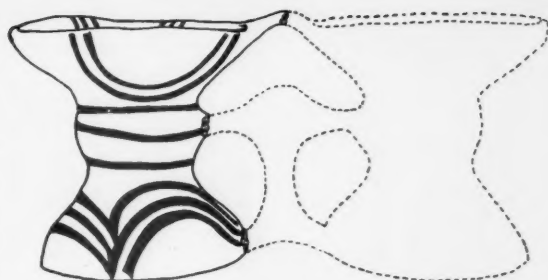


Fig. 8. The binocular vase from Dwelling No. 3.



Fig. 9. Painted jar from Dwelling No. 3.

Fig. 10. Some pottery uncovered in Dwelling No. 3.



jects found were painted and unpainted pottery (FIGURES 9 and 10), millstones, animal bones, mattocks of deer horn, flint tools such as knives, scrapers and piercers, clay spindle whorls, miniature votive vessels and fragments of clay female figurines (FIGURE 11). Some of the sherds, figurines, and miniature pots were discovered under the floor of the house. It is interesting to note that they were concentrated beneath the ovens and altars.

Other similar dwellings in the center of the settlement, near No. 3, were uncovered in 1936 and 1939. Dwelling No. 1 had the same division into

two rooms, with a cross-shaped platform in each. Here, as in No. 3, a second cross-shaped altar was revealed beneath, and under this was a third which was circular in shape. Dwelling No. 2 also consisted of two rooms with an oven in each and remains of a demolished altar.

THE DISCOVERY OF the cross-shaped altars at Volodymyrivka is especially interesting because of the representations of such structures on clay models of houses found in 1912 and 1916 in Trypillian culture settlements. These models show the interior arrangements of dwellings. The model found in 1916 near the village of Sushkivka, Uman District, is a rectangular platform with slightly rounded corners, supported on four legs (FIGURE 12). In front is a vestibule with an entrance into the living room. To the right of the entrance is a rectangular oven with rounded top and a chimney-like hole in the middle of it. Close to the stove is a "sleeping place"—a warm spot in which to

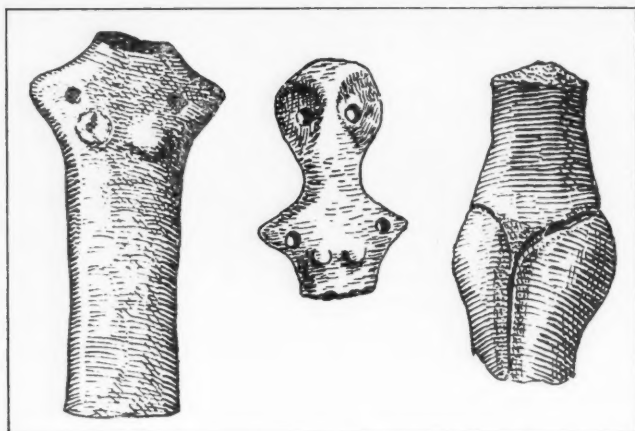


Fig. 11. Fragments of clay figurines from Dwelling No. 3.

sit or lie down. To the left of the entrance, along the wall, is a bench with pottery vessels on it, beside which a woman kneels over a millstone. In the wall opposite the entrance is a round window and below it, on the floor, is a cross-shaped platform similar to those found in the houses at Volodymyrivka. Inside the oven and on the cross-shaped platform are traces of fire. On the latter may be seen a small amount of red paint.

The second model, found in 1912 near the village of Popudnia, Uman District, is a large rounded platform supported on six legs (FIGURE 13). Its arrange-



ment is the same as in the model mentioned above: the vestibule, the entrance into the living room with oven and sleeping place to the right, pottery on the bench along the wall and the figurine kneeling over the millstone to the left, a round window in the wall opposite the entrance and below it, on the floor, the cross-shaped platform. Besides the above-mentioned figurine, there is one seated near the mouth of the oven—probably an idol to protect the home and hearth. The model's window is decorated outside and in with black patterns painted on a reddish ground, representing a star or sun rays. Traces of painting can be seen on the floor.

STILL ANOTHER CLAY house model was found near the village of Volodymyrivka in 1936 (FIGURE 14). It has a rectangular platform on four legs, with a vestibule and an entrance into the larger room, as well as a round window in the wall opposite the entrance. The interior details—oven, sleeping place, altar, bench with pottery, figurines—are lacking. The inner and outer surfaces of the model are painted in three colors: black and white on a reddish ground. Walls and floor are decorated with combinations of straight lines or arc-shaped bands. The window is decorated outside with a toothed pattern and five concentric arcs. Inside there are two black concentric

Fig. 12. (Left) Clay house model from the village of Sushkivka (0.265m. x 0.20m.).



Fig. 13. (Above) Clay house model from village of Popudnia (0.425m. x 0.36m.).

circles around the window, with groups of straight and diagonal lines between them. Fragments of a small painted clay house model were also found near Dwelling No. 3 (see FIGURE 4).

Study of the clay models enables us to understand some details of the houses which could not be discovered by excavation alone (FIGURE 15). Among these are the presence of the round windows over the cross-shaped altars, the structure of the ovens, the place where the grain was usually ground by the housewife and where vessels were placed for the storage of grain or flour, the painted decoration of the houses, and many other features.

THE EXCAVATION OF the Volodymyrivka settlement was interrupted by World War II but was resumed in 1946-47, when more than fourteen dwellings were uncovered. Each one provided valuable data for the study of the life of the Trypillian culture and confirmed previous observations on building technique. In several dwellings were revealed cross-shaped altars. The Volodymyrivka excavations furnish important materials for determining the character of the middle period of the Trypillian culture, its period of prosperity, in the South Buh Basin of the Ukraine. Typical of this civilization is the large, matriarchal clan settlement of an agricultural tribe, located on the fertile loess (black-earth) plateau, with large houses for



Fig. 14. Clay house model from the village of Volodymyrivka (0.285m. x 0.219m.).

several families, abundant pottery with spiral decoration, and cross-shaped altars connected, probably, with sun worship. At this time hoe agriculture and cattle breeding had an important place, while hunting was a supplementary means of subsistence.

At present scholars and archaeologists are continuing their investigations, hoping to solve many problems of the Trypillian culture in the Ukraine, which formed a link between the cultures of East and West.

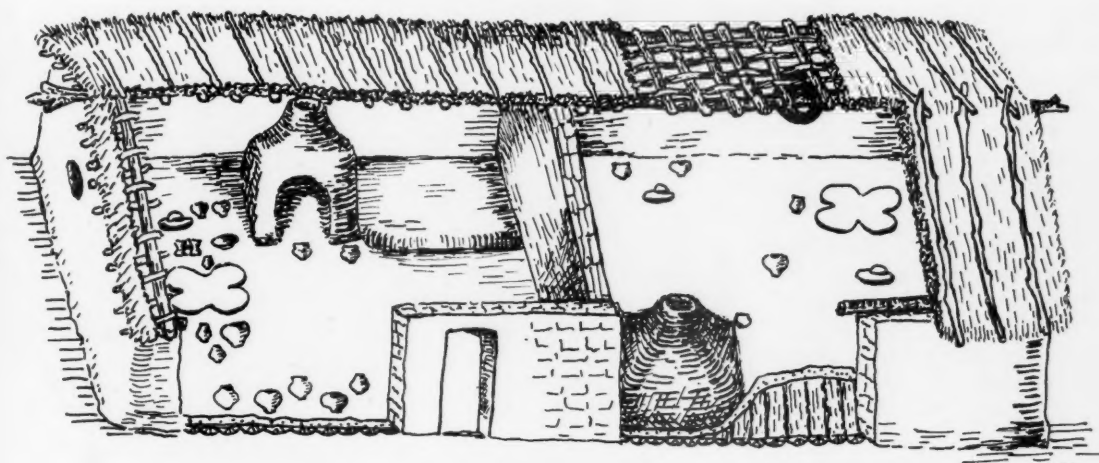


Fig. 15. A restored drawing of Dwelling No. 3, shown in Figures 4 and 5. Details necessary for reconstruction above floor level are derived from a study of the models of these clay houses.

Man's Earliest Art

By Saul S. Weinberg

Associate Professor of Classical Languages and Archaeology,
University of Missouri

MARIA, THE FIVE-YEAR-OLD DAUGHTER OF DON MARCELINO S. DE SAUTUOLA, played about the cave of Altamira while her father dug in its Old Stone Age debris. Wandering about, she stepped into a side chamber about thirty yards from the cave entrance and, looking up, saw a painted animal on the ceiling. Thus, in 1879, were discovered the first great paintings of the Ice Age, but it was not until about twenty years later that their connection with the Palaeolithic period was generally accepted. Actually, Ice Age art had been revealed as early as the 1830's, when an engraving on bone was discovered. More were found in 1860, and then excavations in palaeolithic deposits began to produce a flood of small decorated objects; the so-called minor or mobile art, often termed Home art, was thus well established and was already revealing a pleistocene fauna later made much more famous by the mural art of the caves. The Altamira paintings were published at once, but their Ice Age date was not accepted until the revelations at La Mouthe in 1895, at Pair-non-Pair the next year, and at Font-de-Gaume and Les Combarelles in 1901. Only then, when palaeolithic deposits in the latter caves dated the mural art without any possibility of doubt, was the Ice Age date finally accepted. With the publication by EMILE

CARTAILHAC of his *Mea culpa d'un sceptique* in *L'Anthropologie* of 1902, the controversy was over. The secret of the caves once discovered, exploration was intensified and in cave after cave, especially in southwest France and in the Cantabrian Mountains of Spain, hundreds and thousands of paintings and engravings were detected. The culmination was the discovery in 1940 of the great cave of Lascaux near Montignac in the Dordogne. The search still goes on and new wonders of man's earliest art are constantly brought to light.

In the discovery of cave art, of rock-shelter art, and even of mobile art, two great names have stood out above all others. For over fifty years the Abbé BREUIL has led in the exploration of caves, in the copying of the paintings and engravings found in them and in the publication of cave art. Another pioneer, whose career covered the forty most productive years of research in palaeolithic art, was Professor HUGO OBERMAIER, who died in 1946. It is a happy coincidence that the achievements of each of these scholars have now been summarized in handsome single volumes.

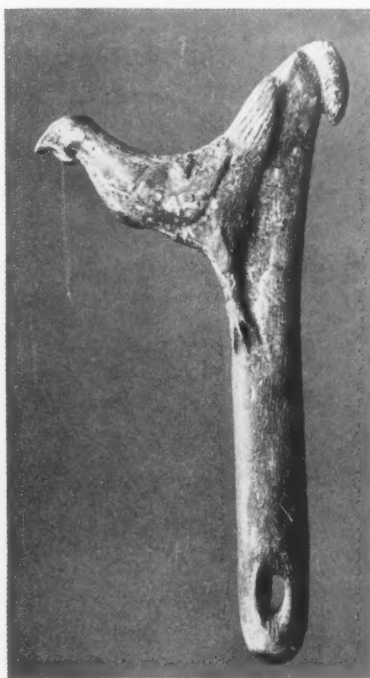


Fig. 1. Magdalenian spear thrower with a black cock, sculptured in bone, from Mas d'Azil in the French Pyrenees. The total height is $8\frac{3}{8}$ inches. (Maringer and Bandi, *Art of the Ice Age*, Fig. 42)

HENRI BREUIL, *Four Hundred Centuries of Cave Art* (translated by Miss MARY E. BOYLE. Realized by FERNAND WINDELS). 417 pages, 531 figures (6 in color). Centre d'études et de documentation préhistorique, Montignac, Dordogne 1952 \$17.50

JOHANNES MARINGER and HANS-GEORG BANDI, *Art in the Ice Age—Spanish Levant Art—Arctic Art* (In execution of a plan by HUGO OBERMAIER). 168 pages, 216 figures (21 in color). Frederick A. Praeger, New York 1953 \$12.50



Fig. 2. Portion of wall decoration in the cave at Castillo in northern Spain, which illustrates well the superposition of paintings of various ages. Earliest are the hands edged in red, of early Aurignacian date. The hands in simple outline are later Aurignacian, as are the tectiforms outlined in red. Over all are painted the large polychrome bison of the late Magdalenian period. The bison on the right is 35½ inches in length. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 452)

In the larger of these works the Abbé BREUIL has given the most complete collected account ever presented, but still not a complete corpus, of all of the caves in which palaeolithic art has been found. Many of these caves have been made known through monographs; others are published here in some fullness and will be presented more completely in separate works. HUGO

OBERMAIER died when he had just begun to write a long-planned work on Ice Age art. The volume was written by two of his disciples, MARINGER and BANDI. While summarizing briefly the cave art which BREUIL discusses, this volume treats generally of two other manifestations of Ice Age art, that of the rock shelters of eastern Spain and the art of the Arctic region. Taken together, these volumes afford the student the most comprehensive survey available; their 750 illustrations, some of which are duplicated, allow the reader to gain a complete visual appreciation of man's earliest art.

Fig. 3. Male bison, painted in dark brown except for a large red area shown on the flank of the left-hand one. Only one horn of each is shown, though all the legs are painted. The total length of the panel is 7 ft. 10½ in. From the cave at Lascaux, Dordogne, discovered 1940. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 95)



Fig. 4. Part of a high-relief sculpture from a rock shelter at Angles-sur-Anglin, in the Vienne valley, France. It preserves the head and neck of a young ibex, magnificently portrayed. The piece is about 29½ in. high; date is middle Magdalenian. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 405)



The surprising discovery of Ice Age art raised numerous problems. The date was of foremost interest. It was soon established that the cave art belonged largely to the Aurignacian and Magdalenian phases of the Old Stone Age, that it was actually a relatively late development in man's growth, appearing when the last glaciation of the Ice Age was just past its peak, when Arctic conditions prevailed in southwest Europe. The absolute dates, originally placed very high, have recently been lowered. BREUIL believes they have been lowered too far and suggests that the period lasted from about 50,000 to 15,000 B.C. MARINGER and BANDI prefer the dates 30,000 to 10,000 B.C. There is still room for difference as the evidence is inconclusive; the present tendency is toward the lower dates suggested by Carbon 14 tests. This was the time in which the first modern man, Cro-Magnon Man, existed; it was he who produced Ice Age art. He was primarily a hunter, gaining from his kill food, furs and hides, tent coverings, bones, horn and ivory for tools and weapons. Traveling in small clan groups, these men hunted in bands. Hunting was the focal point of their existence; it became the inspiration for their art. Men lived in caves or in rock shelters, otherwise in pit or trench houses dug into the earth for warmth. The accumulation of habitation debris at the mouths of caves, in shelters and in open stations, affords the stratigraphy for the relative dating of successive cultures, and in such debris, mostly of Magdalenian date, have been found innumerable implements and weapons often decorated by engraving, painting or carving in relief or in the round (FIGURE 1). Here, as in cave art, animal subjects are in the great majority. The animals are usually depicted

singly, although in a few cases, such as one showing a herd of reindeer, a composition seems intentional. There are even a few narrative compositions, but these are rare in all Franco-Cantabrian art. In form, style and content, this mobile art developed along the same lines as cave art and thus helps in dating the latter.

THE RELATIVE DATING of the various styles of cave art is accomplished, however, through the disentangling of the superimposed paintings and engravings, the palimpsests, found everywhere in the caves (FIGURE 2). A peculiar characteristic of cave art is the habit of painting or engraving on surfaces which had been used by other artists once or several times before, often considerably earlier. The resultant maze is often so intricate that only the trained eye can separate the individual animals. But when layer after layer is extricated, in numerous caves over the wide region in which the art flourished, a sequence of styles becomes plain. Since the cave walls and ceilings often collapsed and decorated fragments became buried in archaeological levels, the art phases can be definitely

connected with the well defined palaeolithic cultures. The dating is further checked by the finding in datable strata of small sketches on stone or bone which agree in style with the wall art. We have already mentioned how the mobile art helps in a similar manner. With these various aids, the following development has been defined:

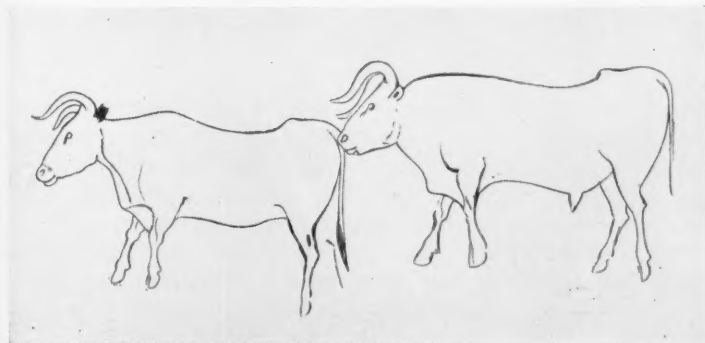
Painting and engraving on rock seem to have begun at about the same time, early in the Aurignacian period. The earliest paintings are the stenciled hands (FIGURE 2) and the red hand prints. The red and yellow meanders are the painted counterpart of some of the earliest engravings, the so-called "macaroni" impressed in the soft clay with the fingers. It was OBERMAIER's idea that these imitated the scratches of cave bear on the walls, but that soon man's innate artistic genius changed mere scratches to spiral and meander patterns. Simple contour drawings of animals, also done with fingers on clay, followed; the outline was often a double or triple line when more than one finger was

Fig. 5. Engraving of a human figure wearing a bison head and skin, from the "Sanctuary" in the cave of Les Trois Frères in the French Pyrenees. The Abbé Breuil, who made the drawing, identified the object in the mouth as a musical bow. Height of figure, 13 in. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 139)

used. Two- or three-pronged tools of wood or horn replaced the fingers and in turn gave way to flint gravers, with which harder surfaces could be cut, and clay drawing was given up. Just as fingers were used for clay drawing, so they were dipped in paint to draw similar wavy-line patterns and animal contours with multiple lines. The single line engravings on rock and the yellow or red outline paintings—black line drawings were still rare—are stiff and clumsy; only two legs are shown, the horns are shown in front view, the so-called twisted perspective (FIGURE 2). A more fluent line soon developed in the big red-painted animals. To this stage belong the tectiforms, geometric patterns which have been variously interpreted as structures or traps; they are painted or engraved. By using both thin and thick lines, the artists soon achieved a certain plasticity, which was further aided by discontinuous outlines and then by the use of washes over parts of the bodies. Flat washes gave simple silhouettes, which in turn were modeled through the use of light and dark tones (FIGURE 3). Red-wash figures were often outlined in black, but real polychromy was to come later in the Magdalenian period. Despite the use of washes in the period, Aurignacian art as seen in the caves is essentially linear.

WHILE SCULPTURE PLAYED a very small role in Aurignacian cave art, it was the age in which the best of the female figurines, the "Venuses," were carved. These have been found widespread across Europe and in Asia in the then ice-free regions. They are almost alone in representing round

Fig. 6. Engraving of a group showing a bull following a cow, illustrating the great purity of line characteristic of the later engravings, in this case late Magdalenian. The figures are only 21¾ and 18 in. respectively for the bull and cow. From the cave at Teyjat in the northern Dordogne, France. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 375)



sculpture in this period, for the majority of the mobile art is Magdalenian. However, in the caves of southwest France, particularly in the Dordogne, where the stone is softer, man carved figures deep within the caves or in rock shelters, sometimes using natural configurations which suggested animal figures. The earliest reliefs, in a rock shelter at Laus-sel, were found in Aurignacian deposits. The five large blocks found may have been part of the enclosure of a shrine; though immovable, they are executed much in the manner of mobile art. Each block bears a deeply cut human figure, four females very like the "Venuses" and a male figure. Other Aurignacian reliefs fol-

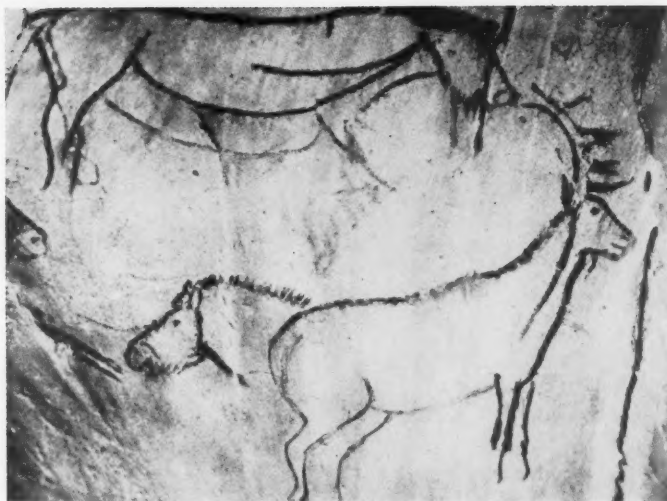


Fig. 7. Black line drawings of middle Magdalenian date from cave at Niaux in the French Pyrenees. The stag is 39½ in. from antler tips to hind hoofs. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 157)

low closely the style of the engravings. Sculpture rather than engraving or painting was characteristic of the Solutrean culture which succeeded the Aurignacian and seems to have been in part contemporary with the Magdalenian. To the Solutrean phase in the Charente, and the contemporary early and middle Magdalenian of the Dordogne, belong most of the masterpieces of relief sculpture. The inspiration is now believed to have come from the Magdalenian culture. Typical of these reliefs, and among those most recently discovered, are the pieces from a fallen frieze in the shelter at Angles-sur-Anglin. The figures include three "Venuses," a bison, horse, ibex (FIGURE 4) and, most unusual of all, a fine human head with the hair, beard and features picked out with paint. To this same development belong the clay sculptures of the Pyrenees, especially the bison of Tuc d'Audoubert.

ENGRAVING CONTINUED alongside relief sculpture in the Magdalenian period, during which there was excellent line work and modeling (FIGURE 5), and at the end of which a very light, fine-line style was achieved (FIGURE 6). But this is the period of painting *par excellence*. The series starts with simple black-line drawings (FIGURE 7) and black tectiforms; then come paintings in broad smeary strokes, rather roughly done, but soon the line work is firmer. The middle Magdalenian phase saw the development of the bodies completely filled with washes of brown or thin red paint, or a series of dots, or both. There are shaded black figures as well (FIGURE 8), and in all a black outline is common. Brown figures lead finally to the

full polychrome style, in which animals are elaborately painted in black, brown, red and yellow, with engraving used for inner details (FIGURE 2). They are beautifully modeled through the use of light and shade and the delicate control of colors. The small drawings in the old contour style of the late Magdalenian are an anticlimax and they lead to a schematic style which spells the death of naturalism. Cave art had run its course.

Stone tools, graveurs for the shallow incisions and heavy picks for the reliefs, were used with but little change throughout this long period. For the paintings, the natural colors were derived from charcoal, ochres, red chalk and manganese, which were usually powdered and made into a paste by mixing with a greasy or oily medium. Some colors were made into crayons to be used cold, but others were used hot and applied with brushes, often very fine. It is certain that some finely powdered colors were blown through a reed or hollow bone tube. A stencil may have been used to prevent blurring of the outline.

A feature which has caused great speculation is the uniformity of style and of development of style throughout the widespread region in which the cave art flourished. It has been reasoned that such uniformity can have been achieved only through the agency of schools at which artists were trained. Indeed, such schools have been found, the most important being that at Parpalló in Spain, where vast quantities of engraved and painted stone slabs, sketch sheets, were found; there were 1430 painted ones alone.

THE LAST AND most intriguing question is that of the motivation for this cave art. While it is art as true to nature as possible, it seems clearly not to be art for art's sake. This is precluded not only by the usual position of the drawings in the most inaccessible and darkest parts of the caves, but also by the habit of superimposing one on another and thus ruining the aesthetic appeal not only of the old work, but of the new as well. With this motive excluded, the obvious explanation is that this art was fundamentally magico-religious, an art in the service of the prevailing idea of

ON THE COVER—Stag hunt, painted in dark red in a rock shelter in Castellón Province, Spain. The total height of the panel is $7\frac{7}{8}$ inches. (Maringer and Bandi, *Art of the Ice Age*, Fig. 182)

the time, giving expression to predominant social anxieties. Since its producers were big game hunters, the pictures were related to the chase; they are hunting magic, giving the hunter a mysterious power over the animals portrayed. This is especially obvious in the paintings of animals pierced by spears, and of clay images ceremonially pierced. But certainly a fertility cult or magic spells for procreation are represented by the many pregnant animals and the sexual signs. It is an art intended to insure happy hunting and the multiplication of game. In the depths of the caves tribal magicians conducted ceremonies in the tribal sanctuaries, decorated by the tribal artists. All this was the expression of a way of life; it died when the climate changed and the way of life ended; but where the latter lived on, in the still Arctic north, the art also survived.

IN CONTRAST WITH the art of the deep caves, there is another series of Ice Age drawings found in natural niches and rock shelters throughout the coastal regions of eastern Spain. Certain similarities in style suggest a possible origin for this Spanish Levant Art in the Perigordian cave art, a subdivision of the Aurig-

nacian in western Europe. But while the cave art deals primarily with individual animals, with humans occurring but rarely and almost always in crude form, this art of East Spain consists of human and animal figures, usually very small, combined in narrative compositions—scenes of the hunt, of combat, of peaceful life. One frieze, at Minateda, is sixty feet long and through its superpositions shows thirteen periods, indicative of a long development. Hunting scenes are common—the naturalistic animals on a very small scale are pursued by little men, often stylized (see COVER). Few are naturalistic; more have long bodies, or short bodies and excessively thick legs; some are almost linear, stick-like figures. But all are animated and leap ahead with great strides. Here the bow and arrow is known, as it was not in the cave art. Containers, possibly of leather and basketry, articles of clothing, elaborate headdresses and ornaments, are shown. If the animals are derived from the cave art, the human figures are not and they, together with the idea of pictorial narrative, may have come from Africa. The art would seem to be the result of the contact of the Franco-Cantabrian art with that of Africa, possibly at a time when the Capsian culture of North Africa infiltrated into Spain.

Fig. 8. Slightly shaded black bison facing each other, in the cave of Le Portel in the Pyrenees. The date is middle Magdalenian. Each animal is $21\frac{3}{4}$ in. long. (Breuil, *Four Hundred Centuries of Cave Art*, Fig. 216)



It is probably all of the Mesolithic phase, beginning 10,000 to 8,000 B.C. and lasting to about 5,000 B.C. Like the cave art, it was probably magical, but there is a possibility that some of the pictorial narratives show successful hunts and may be thank-offerings.

More closely allied to the cave art is that of the Arctic regions, northern Norway and Sweden, the Urals and Siberia. This, again, chiefly showing animals and only rarely human figures, is the art of hunters and fishermen living in a Stone Age culture. There are mostly engravings on rock; paintings are in the minority and are later. The Arctic art, too, is an art of hunting magic and of fertility. There are some scenes, but they cannot compare with those of Spanish Levant Art. There is no certain cultural association of the Arctic art, and while it is most like late Aurignacian cave art, the point of contact is unknown. Whatever

and wherever it may have been, it was long after the cave art had ceased to be produced, for possible dates of Arctic art are set at 5,000 to 1,500 B.C.

The beautiful naturalistic art of the Ice Age is thus seen to have been produced by big game hunters who recorded powerful visual impressions of their prey. It is clear that the figurative art of which they were masters was not attached to a developed stage of civilization. But primitive man had an innate aesthetic sense which made itself felt strongly in an art which was not produced primarily for aesthetic satisfaction. It is rather in the decorative Home art that the artistic ability of early man can best be appreciated for its own sake. Considering the extremely primitive aspect of even late palaeolithic material culture, the artistic manifestations of the period stand out as one of the most remarkable phenomena in the history of human progress.



The Lady and the Monster

About 500 B.C. a large Attic skyphos (two-handled cup) was decorated by the Theseus Painter, a craftsman of spirit and originality. The scene (details above) shows a woman in barbarian dress, mounted on a lion and shooting at an astonishing monster, egg-shaped, checkered and breathing fire. A similar scene appears frequently in vase-painting, but with significant differences; the mount is a horse and the monster a griffin of traditional form. Furthermore, the date of all these representations is no earlier than the beginning of the

fourth century. The story must be the one mentioned by Herodotus and Aeschylus concerning the Arimaspians who battled with griffons in the distant north, and no doubt it was known also to earlier generations. But in regard to the checkerbird, a question remains. Is the vase in the Boston Museum of Fine Arts (Acc. No. 99.523) the earliest preserved illustration of the legend, or can the scene be attributed solely to the extraordinary imagination of the Theseus Painter?

—HAZEL PALMER

ARCHAEOLOGY

A. H. Megaw, Director of Antiquities of Cyprus, attended the Congress of Byzantine Studies which was held in Greece, at Salonica, April 12-20. He reports for us here not only the events of the archaeological section of the Congress but the interesting new restorations of Byzantine monuments in that city.

Ninth International Congress of Byzantine Studies

BYZANTINISTS MAY REMAIN DIVIDED AS TO THE DATE of this or the origin of that, but all who were there agree that the Congress at Salonica in April 1953 was an unqualified success. The choice of Salonica as the venue could not have been bettered. The city itself is the proud possessor of a splendid range of Byzantine monuments and the gateway to many more. On the other hand the Greek Byzantinists devoted to the organization of the Congress the same enthusiasm and energy for which they have long been renowned in the scientific field. The day of the opening ceremony, performed by His Majesty the King of the Hellenes, was indeed marked by a prodigious downpour, but the Macedonians had been praying for rain to save their crops and none of the visitors grudged them this answer to their prayer. The next morning we were greeted by that recurring miracle: across the gulf, the pink snows of

Olympus towering above their wreath of cloud. Thenceforth our labors and our sight-seeing proceeded for the most part in perfect spring sunshine.

The Executive Committee, presided over by Professor KYRIAKIDES, and its indefatigable secretary Professor ZEPOS deserve the heartiest congratulations on their organization. The arrangements at the University for the rich program, which was divided into no less than seven sections running concurrently (the present account is concerned exclusively with the archaeological section), and for visiting the churches were almost all that could be desired. On the other hand the lavish receptions and entertainments, including an excellent performance of Greek popular songs and dances, astonished all not already familiar with the traditions of Greek hospitality. And on top of all this the unexpected devaluation of the drachma

Recently cleaned mosaic of the Vision of Ezekiel, Hosios David, Salonica



left us visitors in that almost unthinkable state in which everything cost just half what we had expected.

The organizers had, it was evident, been liberally supported by the Greek Government. This liberality may indeed have been inspired by the hope that the success of the Congress would contribute to the development of Salonica as a tourist area, but that the Greek authorities have a special solicitude for their Byzantine heritage was made apparent in many ways: by Professor ORLANDOS' announcement that a substantial appropriation had been granted to the Conservation Department which he directs for works at the monasteries on Mount Athos, by Mr. STIKA's communication on the recent work of this Department on Byzantine monuments elsewhere in Greece, and by what we ourselves saw in Salonica.

FOR THOSE OF US who had not been in Salonica since before the war there was much new to see. The great basilica of St. Demetrius burnt in the fire of 1917 is re-roofed and again in use, preserving some of the fabric and, in its main essentials, the scheme of the original fifth-century church. It was gratifying to note that in the final stages, completed since the war, the advice of a scientific committee under the chairmanship of Professor SOTERIOU has secured the preservation of much which had survived the fire but which those previously in charge of the restoration had condemned. In the rotunda of St. George the mosaics have been cleaned with spectacular results and in the dome some unsuspected fragments of an Ascension composition revealed. The cleaning of the small but perfect mosaic in Hosios David has revealed its full beauty, enhanced by an astonishing glow of silver and gold from tipped cubes in unsuspected places. The dating of this masterpiece was a favorite topic of debate, opinions ranging from the fifth to the seventh century.

The church of the Panagia Chalkeon has been repaired and it is to be hoped that this work will be followed by the

cleaning of its much-observed paintings, the only eleventh-century cycle surviving in the city. The finest of the many fourteenth-century churches, that of the Holy Apostles, has also been repaired and a very important but somewhat fragmentary series of mosaics uncovered in the interior. They date from about 1315 and form an invaluable complement to those in Kahrie Djami at Istanbul, where the corresponding decoration of the main church has not survived. Contemporary paintings have come to light in the same church, at St. Catherine (also repaired), St. Panteleimon (work in progress) and elsewhere. It is to be hoped that similar attention will in due course be paid to the city walls, the surviving stretches of which are second only to those of Byzantium itself and in almost as critical condition.

One would wish that the great fire of 1917 had spared St. Demetrius and instead destroyed the quarter overlying the remains of the Imperial Palace, for lying near the heart of a busy city there is now no hope that this will be exposed. It was distressing to see the remains of one of its fine porticoes laid bare only to be covered again by a block of flats. But at least one part of it is to be saved; the remains of the great octagonal building found a few years ago, the site of which is now being expropriated.

THE VISITORS WERE no less impressed by the activity of the Greek Byzantinists in the sphere of research and scholarship. Several important new publications made their appearance in time for the Congress, among them Professor and Mme. SOTERIOU's work on the basilica of St. Demetrius, embodying the results of many years' research and excavation, Professor ORLANDOS' volume on the Early Christian basilica in general, Professor XYNGOPOULOS' publication on the mosaics newly discovered at the Holy Apostles, and S. PELEKANIDES' sumptuous volume of photographs of paintings in the churches of Kastoria. The two last of these publications we owe to the Society of Macedonian Studies, which has displayed activity in a variety of fields. The Congress adjourned more than once to the Society's spacious premises, where an exhibition had been staged varying from a British Council display of books on Byzantine topics published in England, to some full-size reproductions, almost up to Ravenna standard, of sections of the newly cleared mosaics in St. George, which we were otherwise unable to view at close quarters.

It was a large and, except as regards the Iron Curtain countries, a representative gathering, distinguished by the presence of such notable figures as DÖLGER, GRÉGOIRE, LEMERLE, RUNCIMAN and VASILIEV. Since the American delegation was small, partly owing to the timing of the Congress during the university term, it was a disappointment that Professor UNDERWOOD had to leave before he could give his communication about the current work of the Byzantine Institute in Istanbul.

Salonica itself provided themes for several communications. Professor DYGGVE reported on his researches at the rotunda of St. George, which have established that an

Church of the Panagia Chalkeon, Salonica





Church of the Holy Apostles, Salonica

ambulatory was added when the mausoleum built for Galerius was turned into a church. G. THEOCHARIDES established that it was formerly (but perhaps not originally) dedicated to the Asomatoi, and H. TORP gave an account of the mosaics, in which he stressed the technical homogeneity of those in the radiating vaults with those in the dome. Their fine quality is beyond doubt, but not perhaps the fourth-century date he proposed for them.

ST. DEMETRIUS inspired another group of papers. Professor LEMERLE analysed the *Miracula* and in a second paper applied the results of his analysis to the interpretation of the traces of the cult which have been brought to light by Professor SOTERIOU in the basilica. The reliquary beneath the altar, in his view, can never have been regarded as the tomb of the Saint, the church cannot be regarded as a Martyrion in the accepted sense nor can it be cited in support of the doubtful contention that transepts are a hallmark of the Martyrion. Mme. THEOTOKA dealt with the iconography of Saint Demetrius himself and Professor TALBOT RICE showed colored slides of unpublished drawings belonging to the British School at Athens of the mosaics which perished when the church was burnt in 1917.

Communications dealing with monuments elsewhere in Greece included an impressive survey by P. LAZARIDES of the Early Christian monuments of the Dodecanese, which showed that Astypalaea is particularly rich in mosaic pavements, and several concerning Crete: N. PLATON on the Panormos basilica, Professor XYNGOPOULOS and M. CHADZIDAKIS on frescoes of the monastic and Macedonian styles respectively, which call for a reassessment of the role of Crete in the evolution of the so-called Cretan school of painting.

From Byzantium itself we had reports by Professor TALBOT RICE on the Walker Trust excavations in the Palace area and by Professor MAMBOURY on his researches at the

column of Constantine. S. EYICE's discussion of two churches was held to augur well for a sounder appreciation of their Byzantine heritage among the new generation of Turkish archaeologists. Professor VERZONE presented a convincing restoration of the important ruined church at Adalia, inadequately published by ROTT. Of centralized plan with galleries, it combines a dome over the central square with wood-roofed aisles, and brick arches with ashlar walls. The eighth-century date suggested seems rather late.

ONE OF THE highlights was certainly Professor SOTERIOU's survey of the unique collection of icons he discovered some years ago in the monastery on Mount Sinai, some of them as early as the sixth century. The Christian monuments of Egypt featured in H. STERN's analysis of the frescoes in one of the El Bagaouat funerary chapels and in the present writer's account of the basilica at Heropolis, which was of some topical interest as it has a feature in common with St. Demetrius: the aisled transept. From Cyprus, better represented in other sections, A. STYLIANOU reported on the fine but unpublished cycle of twelfth-century frescoes in the monastery near Lagoudhera, the work of a painter of the first rank.

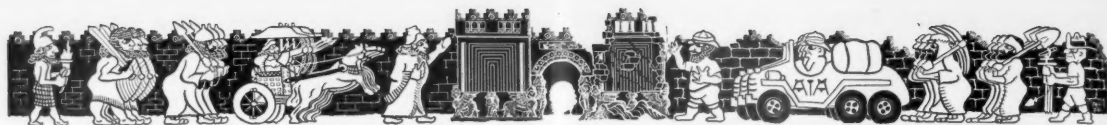
To the story of the westward dissemination of Byzantine art the Yugoslav delegates made some interesting contributions, and Professor MAMBOURY carried it as far as Switzerland.

The Italian delegation contributed a number of scholarly communications including an account of the earliest basilica of St. Mark in Venice and Professor AGNELLO's analysis of the silver treasure from Canicattini in Sicily. But these were surpassed in topical interest by Professor GRÉGOIRE's diatribe on the tomb of St. Peter, a characteristic performance in which the lavish Vatican publication was roughly handled, and Holy Writ dismissed as "ce mélange qu'on appelle le Nouveau Testament."

At the plenary session the venue of the next Congress, at Istanbul in 1955, was confirmed and an important decision announced regarding the concentration of bibliographic efforts in bulletins to be published twice a year in *Byzantinische Zeitschrift* and reprinted on behalf of the International Association of Byzantine Studies. The experts then adjourned to St. George to witness Professor DYGGVE's excavation of the foundation of the altar, a dramatic close to a memorable gathering. In due course the small marble-lined reliquary of the *enkainion* came to light, the circle of experts closed in and the cover slab was removed to reveal a dusty fragment of textile, stained, for those with the eye of faith, with the blood of some unknown martyr. Never was holy relic exhumed with more care, and never subjected to more searching scrutiny.

Thus furnished with one more topic for discussion, the lucky ones embarked for the post-congressional tour, to the Holy Mountain, Thasos, Philippi, Kastoria, ultimately to Athens, and we others reluctantly took our leave.

Photographs by Alison Frantz



ARCHAEOLOGICAL NEWS

Award to Dr. Hetty Goldman

On June 6, 1953, a special award was granted by the Graduate Chapter of the Radcliffe Alumnae Association to HETTY GOLDMAN, Professor Emeritus of the Institute for Advanced Study, Princeton, New Jersey. The award, honoring Professor GOLDMAN's long and notable career, was made "For Distinguished Achievement in the Field of Archaeology." Professor GOLDMAN's work has been carried on in the Near East. In Greece she has excavated the sites of Eutresis and Halae; in Turkey at Colophon and at Tarsus. Her most recent work, at Tarsus, is now in the process of publication; one volume has appeared and others are to follow.

Ossuary in Maryland

On a bluff overlooking Nanjemoy Creek in Charles County, Maryland, Dr. T. DALE STEWART of the Smithsonian Institution has discovered an Indian ossuary—a collection of human bones thrown into a common grave. This is one of more than a dozen similar ossuaries found in this area. These were made by the Maryland and Virginia Algonquin tribes, who used to gather up the bones of their dead periodically and mix them all together.

The Nanjemoy bone deposit, containing bones of as many as five hundred individuals, may throw considerable light on the aboriginals of that part of the country just before and at the time of the first white explorers. Such collections, though yielding no individual bodies, are quite revealing as to general physical appearance, age at death and the presence of certain diseases.

Early Men in New Mexico

A small valley in the Staked Plains of eastern New Mexico has afforded

archaeologists a cross section of approximately 11,000 years of human history in North America. The so-called San Jon site, which evidently was occupied by a small lake during the later years of the last ice age, was a waterhole for animals of the region now long extinct, including mammoths and a variety of bison. The shores of this lake were a hunting ground, it appears, for men armed with stone-pointed spears.

At the lowest level indicating the presence of human beings was found a spear point of the general Folsom type, close to bones of the extinct bison. It may have been used to kill an animal that had become mired in the mud of the lake bottom. Geological evidence shows that the climate was wetter and milder than it is at present. Above this level is a thick stratum without human or animal remains. As the climate changed, evidently, the lake was filled with wind-blown sand. At the next level of occupancy was found a heavier and somewhat cruder stone spearhead, called a Yuma point. The associated bones are those of the existing bison variety.

Although both Folsom and Yuma points have been found scattered over the southwest, it has been very difficult to establish a time sequence between them. The San Jon site shows conclusively that, at least in this part of the country, the Yuma point makers were probably several thousand years later than the Folsom people. Another sterile stratum above the Yuma level is followed by a level containing stone spear points, also with modern bison remains, which geological evidence shows cannot be much more than one thousand years old. The time lapse between the Folsom and Yuma peoples was somewhat greater than that between the latter and the recent Indians.

The Smithsonian Institution has recently published a report on this site.

The geology was studied by Dr. SHELDON JOHNSON of the University of Wisconsin. The site was reported by Dr. FRANK C. HIBBEN of the University of New Mexico, and investigated by Dr. FRANK H. H. ROBERTS of the Smithsonian's staff.

Gem from Caesarea

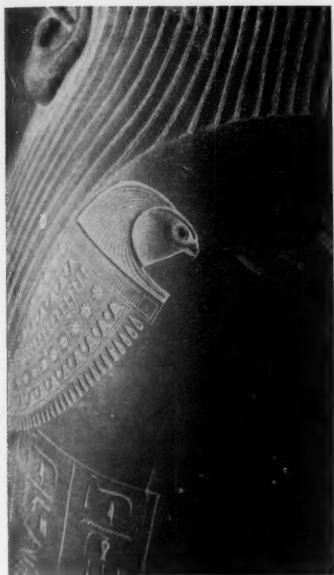
One of our readers, Mrs. ANNIE HAMBURGER of Benyamina, Israel, tells us that ancient gems are often picked up in the sands of Caesarea, the famous Roman colony whose ruins lie about four miles from her home, and that she is preparing a publication of all the gems from this site, owned by herself and other collectors in the neighborhood. A photograph of an interesting



Courtesy Department of Antiquities, Israel

piece found by Mrs. HAMBURGER at Caesarea is reproduced here.

This gem, of heliotrope (0.01m. x 0.0125m.) shows in intaglio the figures of Hermes (left) and Ares. Hermes, wearing his characteristic winged cap, holds a caduceus and a money bag. In front of him are a cock and a goat; behind him a tortoise and a scorpion. Facing him is Ares in full armor—crested helmet, cuirass, spear and shield; behind his right shoulder is a trophy. The gem is dated by Mrs. HAMBURGER to the second or third century of our era.



Shoulder area of the sarcophagus lid (left). XXVIth Dynasty (660-525 B.C.). The inscription states that this is the sarcophagus of the "Head Physician, Chief of the Libyans, Psametik." Now on exhibition at the University of California, Berkeley.



Egyptian framed false door from an Old Kingdom tomb at Giza belonging to Akhty-ir-n, lector-Priest (right). Vth-VIth Dynasty (ca. 2750-2475 B.C.). Recently acquired for display by the Minneapolis Institute of Arts.

Egyptian Antiquities—Berkeley

The University Art Gallery of the University of California, Berkeley, is exhibiting until December 6th a collection of Egyptian antiquities from the Museum of Anthropology on the same campus. There are some six hundred objects, chosen mainly from the collection of PHOEBE APPERSON HEARST, which was assembled for Mrs. HEARST by Dr. GEORGE A. REISNER at the turn of the century. Also included are several important specimens given by the late WILLIAM RANDOLPH HEARST, one of which is a large stone sarcophagus lid (see illustration).

The exhibition was designed and arranged by the Director of the Gallery, Mr. WINFIELD SCOTT WELLINGTON. During the past few years Mr. WELLINGTON has organized similar exhibitions of interest to art historians, showing material from Oceania, Peru, Middle America, the southwest United States, California and the north Pacific coast.

—Minneapolis

The acquisition of a fine Egyptian sculptured relief (illustrated) of the late Old Kingdom period has been announced by the Minneapolis Institute of Arts. It is a framed false-door or

ka-door belonging to the lector-Priest, Akhty-ir-n, which was found in the cemetery area west of the Pyramid of Cheops at Giza. The stela is of the type found on tombs of Dynasties V and VI, dating approximately between 2750 and 2475 B.C.—a period immediately succeeding that of Cheops and his followers.

Among similar monuments of the period the door is outstanding in the precision of its carving. It is decorated with hieroglyphs and shows the figure of the deceased owner in varying sizes in six different places. The relief is carved in a rich white limestone and bears traces of green paint.

The false door was a device in widespread use in Egyptian funerary architecture during the Old Kingdom. It served as a passageway for the ka or spirit of the deceased, who was buried beneath the superstructure of the tomb, and also as the setting for an altar where provisions could be placed for the use of the deceased in the afterlife.

Council for Old World Archaeology

The *Committee for Old World Archaeology*, the formation of which was announced in the Autumn 1952 issue, has completed its investigation. As a

result of its recommendations, a permanent organization, the *Council for Old World Archaeology*, has been formed and incorporated.

The control of the Council is vested in charter members, who were nominated by nine organizations, as follows:

- JOTHAM JOHNSON (ARCHAEOLOGICAL INSTITUTE OF AMERICA)
- LAURISTON WARD (American Anthropological Association)
- ROBERT J. BRAIDWOOD (American Schools of Oriental Research)
- IRVING ROUSE (Society for American Archaeology)
- BRUCE HOWE (American School of Prehistoric Research)
- RICHARD K. BEARDSLEY (Section H, American Association for the Advancement of Science)
- SCHUYLER CAMMANN (American Oriental Society)
- J. LAWRENCE ANGEL (American Association of Physical Anthropologists)
- GEORGE C. MILES (American Numismatic Society)

At a meeting in Cambridge, Mass., May 23, 1953, the following were elected trustees: LAURISTON WARD (President), NOELL MORSS (Clerk and Treasurer), J. LAWRENCE ANGEL, WENDELL C. BENNETT, ROBERT J. BRAIDWOOD, SCHUYLER CAMMANN,

BRUCE HOWE, JOTHAM JOHNSON, GEORGE C. MILES, C. R. MOREY, IRVING ROUSE and ERIK SJOQVIST.

A meeting of the trustees was held in New York, May 23 and 24. It was agreed that the Council should concern itself with the archaeology of all Europe, Africa, Asia and Oceania, for all periods of time, and that its major activity should be the publication of information in this field, chiefly in the form of annual surveys of archaeological news and selected annotated bibliographies.

Plans for financing are now under way and it is hoped that publication can begin some time in 1954.



Courtesy of National Geographic Society

Statue of a Mexican God

The impressive clay figure shown here is the result of years of painstaking restoration at the Museo Nacional de México. It was excavated in 1941 in a burial mound on the Vera Cruz coast by a Smithsonian Institution—National Geographic Society expedition. All the evidence showed that the statue had been deliberately broken. In the large, heavy vessel now on the figure's head were portions of the body, while pieces of the arms and legs were standing up around the vessel's mouth. Mingled with the fragments were the bones of an infant. Evidently the pieces

had been piled up as an offering. The shattered condition of the figure made it difficult to realize that all the pieces belonged together, and restoration was complicated by the very large size of the statue, almost three feet high including the vessel.

Once the restoration was completed, it could be seen that the vessel on the figure's head was actually a brazier and that the personage was to be identified as the Fire God Xiuhtecutli, a sort of Mexican Prometheus, who was also called Huehuetotl, the Old Old God. Dr. PHILIP DRUCKER, who has recently published the statue, points out that the figure is a remarkable blend of realism and conventionalization. The artist knew how to convey a sense of great age through suggestion. The sharp-peaked indentations above and below the eyes produce heavy shadows, giving an effect of deep sockets from which the heavy-lidded eyes bulge. The deeply incised lines about the face suggest both wrinkles and the grimaces caused by the strain of carrying the brazier. The arms and legs are the scrawny limbs of an old man. The shoulders are hunched, the back bent to an almost deformed angle to support the great weight.

Xiuhtecutli was the most important of the Aztec minor gods. His cult flourished in and around the Valley of Mexico. His appearance at a site in the coastal plain of Vera Cruz must be interpreted as a reflection of strong Highland influence on the early population of the Cerro de las Mesas region. Thus, the discovery of this fine specimen not only gives us a new masterpiece of American art but demonstrates that predecessors of the Aztecs in the highlands of Mexico extended their influence to the Gulf Coast, just as did the followers of Montezuma more than five hundred years later.

Institute Bulletin

Volume 44 (October 1953) of the BULLETIN OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA has just been published. It contains reports from the officers of the Institute as well as accounts of the activities and discoveries of the Schools in Santa Fe, Athens, Rome, Jerusalem, Baghdad and Cairo. It also lists every member of the In-

stitute (over 2300 at present) and gives the addresses of the officers of the Institute's forty local Societies. It forms a concise record of everything which concerned the Institute in its operations at home and abroad during the past year. Copies can be obtained by writing to the General Secretary of the ARCHAEOLOGICAL INSTITUTE OF AMERICA, Andover Hall, Francis Avenue, Cambridge 38, Mass. The cost (including postage) is \$1.00 (domestic mailing) and \$1.10 (foreign mailing).

The final stock sale of back issues of the AMERICAN JOURNAL OF ARCHAEOLOGY and other publications of the ARCHAEOLOGICAL INSTITUTE OF AMERICA will end on December 1, 1953. Prices have been greatly reduced. Write for List #7 to the General Secretary, at the same address.

Visiting Lecturer

Dr. LUISA BANTI, well known archaeologist who is Professor of Etruscology at the University of Florence (Italy), has been appointed Virginia C. Gildersleeve Lecturer at Barnard College, Columbia University, for the year 1953-54. Dr. BANTI is the first foreign scholar to be appointed to this lectureship.

Much of Dr. BANTI's archaeological work has been done on the island of Crete, where she spent many years excavating and publishing the ruins of the Minoan palace at Phaistos. The courses she will offer at Barnard College are concerned with Greek art as well as Etruscan and Roman.

Rome Fellowships, 1954-55

The American Academy in Rome is again offering a limited number of fellowships for mature students and artists capable of doing independent work in architecture, landscape architecture, musical composition, painting, sculpture, history of art and classical studies.

Applications and submissions of work, in the form prescribed, must be received at the Academy's New York office before January 1, 1954. Requests for details should be addressed to the Executive Secretary, American Academy in Rome, 101 Park Avenue, New York 17, N. Y.



BRIEF NOTICES OF RECENT BOOKS

Art of the Roman Empire

The Season Sarcophagus in Dumbarton Oaks, by GEORGE M. A. HANFMANN. Volume 1, viii, 280 pages; volume 2, xx, 238 pages, 150 figures. Harvard University Press, Cambridge 1951 (Dumbarton Oaks Studies, 2) \$25.00

A sarcophagus which has been known at least since 1693 and which was long in the Barberini Palace in Rome was purchased for Dumbarton Oaks in 1936 and forms, in this sumptuous publication, a point of departure for a tremendous study of art and iconography under the late Roman Empire.

The sarcophagus is ornamented with a circular medallion portrait of a married couple framed by the signs of the zodiac, and four winged youths who represent the seasons. The attributes in their hands are lost, but from the costumes and headgear, by comparison with other groups and by study of traces on the background, they can be identified as Winter (costume of Attis, with basket, duck or hare), Spring and Summer (each with a basket), and Autumn (with a bird or a hare).

This theme was a favorite on the front of sarcophagi from the early third century of our era until the middle of the fourth. Sarcophagi of this type must have been produced in the city of Rome. The Dumbarton Oaks example is one of the later ones—dated by HANFMANN between 325 and 350 A.D. The three chapters in which this conclusion is reached provide almost a textbook on Roman iconography and style of the later age. Such an account has been urgently needed and it will be used constantly for reference. Fixed dates are provided for the chronological structure by the Prosenes sarcophagus (shortly after 217 A.D.), which was vindicated as a basis for dating by RODENWALDT [*Bonner Jahrbücher* 147 (1942) 220, note 8] after having been doubted by WILPERT; the Arch of Sep-

timius Severus; the Arch of Constantine; the altar of Cybele, dedicated in 295 A.D., and many similar monuments. Besides historical reliefs and sarcophagi, there is the evidence of portraits which can be classified to show the development of style. Other subjects, such as the Amorini reliefs, influenced the development of the type.

The four male seasons with attributes indicative of a cycle within a year appear on these third-century sarcophagi and are not much older in art or in thought. The first known representation of the four is on the Arch of Trajan at Beneventum (circa 117-120 A.D.). See, however, a very recent suggestion by P. W. LEHMANN, that two winged youths, one with full platter, one with empty, on an early wall painting at Boscoreale foreshadow this idea of recurrent seasons, productive and unproductive: *Roman Wall Paintings from Boscoreale*, page 23. After the chapters on the Dumbarton Oaks sarcophagus and the related material, which actually require only 71 pages, HANFMANN devotes the remainder of the large book to the history of the Seasons and the Horae in art and in thought and literature throughout Classical antiquity and, more briefly, later times. The Greeks had imagined three females who, by the Hellenistic age, had crystallized as graceful, full-length figures with functions not too clearly differentiated. They are Ὠραι in Greek, transliterated Horae in this book, but the meaning is not the common one for the Latin *horae*, 'hours.' In Roman times, these *horae* ornamented a tomb found at Roccagiovane, with an inscription which mentions *tempus* and *tempora* and the Latin *horae*. After this come the four fully personified and strictly differentiated male seasons, whose popularity begins to fade only with the triumph of Christianity.

The second volume contains the vo-

luminous notes to the first volume, a catalogue of all seasonal representations by types, the indices, and the 150 illustrations. The amount of material assembled here is absolutely formidable. The general reader will not derive much pleasure from the second part of the text and from the second volume, and he will be baffled by more than the difficulty of terminology which I have already indicated. In this mass of material there are inequalities and confusion in the presentation and errors in interpretation and translation. But no matter what his own technical equipment, the reader will benefit from the first section and appreciate the importance of this class of monuments as documents of pagan art and thought. New examples of this interesting class of sarcophagi are still to be found, it seems; see the child's sarcophagus with four seasons, from Carthage, found after HANFMANN's book was complete: *Revue Archéologique* series 6, 40 (1952) 39, figure 8, and *Fasti Archaeologici* 4 (1951) 338, number 3438.

DOROTHY KENT HILL

The Walters Art Gallery

Early Greek Sculpture

Fruehgriechische Junglinge, by ERNST BUSCHOR. 160 pages, 180 figures, 1 map. R. Piper & Co., Munich 1952 DM 19.80

If it is the task of the archaeologist not only to explore, to interpret and to classify, but also to appreciate, to enjoy and to evaluate, BUSCHOR's book on the *Kouroi* should be a welcome supplement to GISELA RICHTER's scholarly presentation of the same material. The two works show agreement on most points (except for a few dates); BUSCHOR's illustrations, though fewer, are on the whole better. His book includes, moreover, some sculptures which, for one reason or another, are



Head of a youth, Leyden Museum. Sixth century B.C.
The hole was pierced through the mouth in later times.

absent from Miss RICHTER's publication; notice especially a terra-cotta head from Sparta (fig. 10); part of a colossus from Thera (figs. 66/7; RICHTER's No. 16 a, there only in line drawing); a Naxian head from Copenhagen (figs. 68/9); the completely preserved monument of Aristodikos from Attica (figs. 131/2); a head from Keramos in Caria (fig. 164); a number of significant bronze statuettes. There is no mention in either book of the mid-sixth century, probably Island Greek, head which I saw in 1938 in the Leyden Museum, and which is illustrated here with the permission of the Museum (granted in 1939).

Most, if not all, of the *Kouroi* stood in sanctuaries or in cemeteries. What was the meaning of these statues? BUSCHOR insists that the *Kouros* "immer und in jedem Fall ein göttliches Wesen bedeutet," although he admits that only very few *Kouroi* represent a particular god, namely Apollo. It would be better to forego any mention of deity or divinity without presenting evidence to support this interpretation. One may rather suggest that the *Kouros* was an *agalma* (as a dedication) or a *sema* (as a funeral monument) ἀγαθὸν καὶ σῶφρονος ἀνδρός.

There is a map at the end of BUSCHOR's book showing the provenience and thus the distribution of the *Kouroi*. The significance of this map lies in the indications it provides not only for regional or local stylistic peculiarities but also for the understanding of the group as a whole. For this map illustrates and defines the cultural unity of archaic Greece.

A. E. RAUBITSCHKE

Princeton University

Mississippi Valley Settlement

Kincaid. A Prehistoric Illinois Metropolis, by FAY-COOPER COLE and others. 385 pages, 69 figures, 32 plates. University of Chicago Press, Chicago 1951 \$7.50

Kincaid is located near the southeastern tip of Illinois across the Ohio River from Paducah, Kentucky. It is composed of an extensive village site and nineteen mounds that extend over an area a mile in length; small related sites of the earlier periods are also in the nearby hills. The complex was excavated by the Department of Anthropology of the University of Chicago from 1934 to 1942 under the general direction of Dr. COLE. In this splendid

comprehensive report of the excavations COLE has used material from many studies prepared by his former graduate students, seven of whose names appear on the title page. He has selected and integrated the data into a coherent, well written volume that is an important contribution to the archaeology of the United States, particularly that of the Mississippi Valley.

An introductory chapter effectively presents a general picture of the Kincaid area. This is followed by a report on the Middle Mississippi Kincaid village site, mounds, and material culture, the Woodland and late Archaic occupations of the area, and a fine summary in which the successive cultures are related to materials from central Illinois and the Carbondale area. In four appendices ROBERT E. BELL reports in detail on his dendrochronological studies of the region; KENNETH ORR summarizes an extensive ceramic analysis of fifteen thousand sherds in which he was able to show culture change with time; JOHN W. BENNETT presents trait lists grouped according to activities such as agricultural and food getting, military and hunting, ceremonial and political; CHARLES G. WILDER analyzes the impressions of textiles and of cord that were found on the pottery.

The earliest occupation of the site is that which COLE terms the Faulkner component. It is a late Archaic settlement of a pre-pottery nomadic hunting, fishing and food-gathering group, and the culture is related to the pre-pottery shell mounds of the Tennessee Valley. Were it not for the complete absence of pottery, its trait list would qualify it as Early Woodland. After a hiatus, an early Middle Woodland group of the Baumer focus lived in the area and may have had some knowledge of agriculture. It is roughly contemporary with Hopewell and is related to the Crab Orchard site near Carbondale and more generally to sites in the southeast. The next occupation of the area, the Lewis focus, is a late Woodland settlement that is very uniform in its characteristics at the thirty-two sites located by MACNEISH and was of short duration. The people may have depended more on the hunting of land animals than did their predecessors, for many small isolated and unprotected sites were found back in the

hills. The types of stone that were worked were identified by BELL, and their sources in Illinois and Tennessee were located. This is an interesting and important technological approach toward a more complete study of a lithic industry.

The Kincaid component appears at the site as a full-blown Middle Mississippi culture. The first small agricultural settlements were relatively simple but, following a severe flood, one big village was built with a large central plaza on the periphery of which were truncated pyramids, some of which were palisaded on top. Tree ring dates for the later part of the Kincaid occupancy were obtained from eight samples of red cedar (*Juniperus virginiana*), and they are all within the sixteenth century. Architecturally, three periods were recognized—Early, Middle and Late Kincaid. Pottery styles did not clearly show evidence of change until ORR made a study of large groups of early and late sherds and statistically determined the probability that the difference in the frequency of a pottery trait in the two samples was significant. There may

have been a potters' quarter and stone-workers' quarter at Kincaid, judging from the localized concentrations of sherds and of spalls. Unfortunately the very acid soil and the seasonal flooding of the site has destroyed all evidence of shell work, organic material and most of the bone. Kincaid is related to other spectacular Middle Mississippi sites such as Cahokia at East St. Louis, the Angel mounds at Newburgh, Indiana, and the mound group at Wycliffe, Kentucky, as well as to other truncated mound complexes and palisaded villages in the southeast that were dominant agricultural settlements in the centuries just preceding the arrival of the European explorers. Kincaid is the only one so far published in detail.

Dr. COLE and his co-workers are to be congratulated for the preparation of a very fine report on a series of excavations conducted with excellent field techniques that were perfected by this group. Much can be learned about current archaeological field methods from a study of this report and its illustrations. The immense amount of labor in the field, laboratory and office by a

large group of archaeologists has resulted in an outstanding work of permanent value.

FREDERICK R. MATSON

Pennsylvania State College

Pueblo Art

Kiva Mural Decorations at Awatovi and Kawaika-a, with a survey of other wall paintings in the Pueblo Southwest, by WATSON SMITH. xxi, 363 pages, 92 figures, 9 color plates. Peabody Museum, Cambridge 1952 (Papers of the Peabody Museum of American Archaeology and Ethnology, Volume 37) \$7.50

This important work has long been awaited by archaeologists and artists alike, and their expectations have been justified. This is by far the most important compilation of prehistoric art from the American Southwest.

Inasmuch as the abundant art forms found at the Awatovi and Kawaika-a were a part of the ceremonial life of these pueblos, the author has included a general discussion of Pueblo ceremonials and the place of the ceremon-



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By ROBERT REDFIELD, UNIVERSITY OF CHICAGO

CIVILIZATION is here considered as a modification and transformation of primitive life. In explaining the human career the author stresses ideological and ethical factors, redressing the usual balance of emphasis on technological and economic influences. He shows

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nial structure, the kiva, in pueblo culture. This is followed by a description of all the mural paintings which have been found in the Jeddito area. Comparative data from Zuni and from the modern Hopi villages add considerably to an understanding of the methods of construction and ways of applying paint.

Of special interest to technicians and excavators is a description of field methods of preservation and removal of mural paintings for reproduction. The Awatovi workers modified and amplified techniques which had been used successfully at Kuaua in New Mexico.

An important reference list of all mural paintings in the American Southwest is included. Scattered murals from the Pueblo II period up to and including those of the modern pueblo villages comprise a lengthy list. Many of these paintings had not heretofore been published or even fully noted. Some of the more important ones are reproduced in the Awatovi report by way of comparison.

A considerable portion of the present work deals with analysis of the patterns and design elements of the paintings in the Jeddito district. It was found that certain characteristic layouts or compositions could be dis-

tinguished. Parts of the motifs of these layouts, such as methods of depicting clouds and rain, birds, fish, animals, feathers and the like, are described in detail.

One of the most interesting portions of this report, for ethnologists as well as archaeologists, deals with the analysis and ceremonial significance of the Jeddito murals. The identification of a number of design elements in the paintings is made with certainty. In fact, various kinds of feathers, birds, animals and ceremonial paraphernalia are definitely identified. Many of these can be connected with modern ritual as practised in the Hopi villages in the

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same district. The exact interpretation of many of the prehistoric data, however, was difficult or impossible. An interesting result of these interpretative studies was the recognition of similarities between the Awatovi paintings and modern pueblo ceremonial. These studies have done much to bridge the gap between archaeology and ethnology.

Students of practically every phase of culture may find material of interest in the Awatovi report. A section of textile representations indicates cloth decorations and patterns as depicted in the murals. Varied techniques may be identified as well as clothing designs. Masks and headdresses are of interest, especially those which are still in use in modern pueblos.

Not the least attractive feature of the book is in the form of the serigraph plates by LOUIE EWING. These illustrations not only present the mural paintings in full color but allow the investigator to make his own interpretations of details.

The entire work is pleasing from the artistic point of view. There are points of interpretation upon which authorities will disagree. However, the data are presented in complete form with all existing comparisons in the American Southwest added. As such this work is highly recommended both as a reference and as background reading for the archaeology, ethnology and art of the Southwest.

FRANK C. HIBBEN
University of New Mexico

Spartan History

Ancient Sparta. A Re-examination of the Evidence, by K. M. T. CHRIMES (Mrs. DONALD ATKINSON). xv, 527 pages, 9 plates, 1 map. Philosophical Library, New York 1952 \$8.75

Sparta, not only the political enemy but the cultural antithesis of all that Athens means to the history of civilization, is in many ways a mystery to us. Her silence about herself has matched the proverbial reserve of her citizens. We have had to rely on the words of strangers, often idealizing according to philosophical principles (as has long been felt) or, on the contrary, fundamentally hostile, as the author shows in one of her major contributions. The chief native sources are the inscriptions, mostly of Hellenistic and Roman date, from periods when, it has often been assumed, the distinctive Spartan

institutions were no longer in effect. But in a society naturally so conservative much valuable material for an earlier time may well be recovered from late evidence. Mrs. ATKINSON has subjected the inscriptions to a thoroughgoing analysis in the first two hundred pages of her book and thereby presents a picture of Spartan society in this period. In Part II she retraces the history of the distinctive Spartan system and tries to reconstruct earlier conditions. To be sure, as the evidence becomes more tenuous assent grows more doubtful. But whatever the ultimate judgment on her conclusions the author has demonstrated how much there is still to be learned from an imaginative and conscientious use of a variety of source materials. It is unfortunate that few of the contributions on Sparta within the past ten years have been able to take account of one another. Yet one feels this unavoidable failing less here than in the writing of those who have not had the benefit of this vigorous, rewarding re-examination.

M. H. JAMESON
University of Missouri

Coinage of Antioch

Antioch-on-the-Orontes. Volume IV, Part 2. Greek, Roman, Byzantine and Crusaders' Coins, by DOROTHY B. WAAGE. xii, 187 pages, 8 plates, 12 charts. Princeton University Press, Princeton 1952 \$25.00

One of the notable numismatic events of 1952 is the publication of the coins found during the years 1932-39 in the excavations of Antioch and the nearby port of Seleucia Pieria. Since the author has confined herself to the classification and description of the coins and has made little attempt to analyze their significance or relate them to a historical background, the volume has an extremely limited appeal for the general reader. For the historian and numismatist it is an invaluable record of the coinage of one of the great cities of the Greek world, a site which retained much of its importance as a major mint under the Roman and early Byzantine emperors.

Over 14,000 coins are treated by Mrs. WAAGE with scrupulous regard for detail. The catalogue proper is supplemented by a series of charts giving the comparative representation of various mints for the Greek through the Byzantine periods, indexes of monograms

found on the coins, and illustrations of unpublished or otherwise significant specimens. Expense has not been spared in the format of the publication and the result is a truly sumptuous volume.

Since the vast majority of the coins are of bronze and since it is a well-known axiom that bronze rarely travels far from its place of emission, the excavation finds at Antioch make it possible to attribute to the local mint a number of types of uncertain origin and to reattribute others.

There are certain weaknesses in the publication, stemming chiefly from a failure to incorporate the results of recent studies. Mrs. WAAGE follows MAURICE in assigning issues of the fourth century A.D. to the mint of Tarragona, but for many years there has been general agreement among scholars that the mint in question was not Tarragona but Ticinum in Northern Italy. The discussion and arrangement of the Antiochene bronze of the first century B.C. would have been strengthened by reference to the fact that HENRI SEYRIG (*Syria* 1950 5-15) has made important emendations in the earlier chronology proposed by NEWELL. While the Antioch material convincingly supports Mrs. WAAGE's reattribution of certain issues without mint marks, she seems to be on less firm ground in questioning the origin of a CONCORDIA MILITVM type of the Tetrarchy period which carries the marking K, commonly thought to refer to Cyzicus. At Antioch these K coins outnumber those with the mint mark of Antioch, but the excavation record shows that they also predominate at Corinth, and the same situation is true at Athens although the Agora material was not available to Mrs. WAAGE in printed form. It seems to this reviewer that the prevalence of these K coins at all three sites indicates only that at this period Cyzicus was the chief supply mint.

This question of mint attributions points up the great importance of the Antioch volume. Many of the thorny problems of origin can be resolved not on the basis of museum collections but from evidence unearthed at the major sites of antiquity. By making a vital section of these excavation data available, Mrs. WAAGE has performed a service which far outweighs any minor defects of presentation.

MARGARET THOMPSON
American Numismatic Society

NEW BOOKS

Selected at the editorial offices from various sources, including bibliographical publications, publishers' announcements, and books received. Prices have not been confirmed.

ÅKERSTROEM, ÅKE. *Architektonische Terrakottaplatten in Stockholm*. 105 pages, 11 plates (4 in color), 52 figures. C. W. K. Gleerup, Lund 1951 (Skrifter utgivna av Svenska Institutet i Athen)

ARBERRY, A. J., editor. *The Legacy of Persia*. xvi, 421 pages, 53 plates. Oxford University Press, New York 1953 \$6.00

ARIAS, P. E. *Scopas*. 158 pages, 16 plates. L'Erma, Rome 1952 (\$5.50)

BEER, ELLEN J. *Die Rose der Kathedrale von Lausanne*. 80 pages, 65 figures, 1 color plate. Benteli Verlag, Berne 1952 (\$7.00)

BROEDNER, E. *Untersuchungen an der Caracallathermen*. 48 pages, 34 plates, 16 figures. De Gruyter, Berlin 1951

BULLING, A. *The Meaning of China's Most Ancient Art. An Interpretation of Pottery Patterns from Kansa (Ma Ch'Ang and Pan-Shan) and their Development in the Shang, Chou and Han Periods*. xii, 150 pages, 8 plates, 79 figures. Brill, Leiden 1952 (\$10.00)

CAMPBELL, T. N. *A Bibliographic Guide to the Archaeology of Texas*. 64 pages. Austin, Texas 1952 (University of Texas, Archaeology Series, No. 1)

CRESWELL, K. A. C. *The Muslim Architecture of Egypt. Volume 1*. xxvi, 292 pages, 134 plates, 173 figures. Clarendon Press, Oxford 1952 \$65.00

CROME, J. F. *Die Skulpturen des Asklepiostempels von Epidauros*. 57 pages, 51 plates. De Gruyter, Berlin 1952 \$9.50

ELBERN, VICTOR H. *Der Karolingische Goldaltar von Mailand*. 123 pages, 11 figures. Einem und Lutzeler, Bonn 1952 (\$2.25)

ETTLINGER, E., and C. SIMONETT. *Römische Keramik aus dem Schutthügel von Vindonissa*. 128 pages, 34 plates. Verlag Birkhauser, Basle 1952 (Veröffentlichungen der Gesellschaft Pro Vindonissa, Volume 3) \$7.00

Forschungen zur Kunstgeschichte um christlichen Archäologie. Volume 1. Neue Beiträge zur Kunstgeschichte des 1. Jahrtausends. 16 plates (1 in color), 2 figures, 14 plans. Baden-Baden 1952 (\$6.50)

GARDINER, ALAN HENDERSON and T. ERIC PEET. *The Inscriptions of Sinai*. 2nd edition. Part 1. 96 plates. Egypt Exploration Society, London and Boston, Mass. 1952 \$16.00

GARSTANG, JOHN. *Prehistoric Mersin: Yümük Tepe in Southern Turkey (The Neilson Expedition in Cilicia)*. xvii, 271 pages, 34 plates (1 in color), 161 figures, 1 map. Clarendon Press, Oxford 1953 \$9.00

GOETZ, H. *Baroda Museum and Picture Gallery. Handbook of the Collections*. 76 pages, 45 plates. Baroda 1952 (Bulletin of the Baroda Museum and Picture Gallery, Volume 8, Part 1, 1950-52)

GRANT, MICHAEL. *The Six Main AES Coinages of Augustus*. xix, 178 pages, 20 plates. University Press, Edinburgh 1953 \$3.50

HILL, IDA THALLON. *The Ancient City of Athens: Its Topography and Monuments*. xi, 258 pages, 2 plates, 34 plans. Methuen, London 1953 \$5.00

HOORN, G. VAN. *Choes and Anthesteria*. 200 pages, 150 plates. E. J. Brill, Leiden 1951 \$21.00

KNORR, ROBERT. *Terra Sigillata Gefässe des 1. Jahrhun-*

derts mit Töpfernamen. 83 plates. Kohlhammer Verlag, Stuttgart 1952 \$5.00

LANGE, K. *König Echnaton und die Amarna-Zeit*. 143 pages, 65 plates, map. Gesellschaft für Wissenschaftliches Lichtbild, Munich 1951 \$5.50

Les antiquités égyptiennes, grecques, étrusques, romaines et gallo-romaines du Musée de Mariemont. 205 pages, 65 plates. Editions de la Librairie Encyclopédique, Brussels 1952 \$12.00

LEVI, ANNALINA CALÓ. *Barbarians on Roman Imperial Coins and Sculpture*. xi, 56 pages, 17 plates. American Numismatic Society, New York 1952 (Numismatic Notes and Monographs, No. 123)

LIEGLE, JOSEF. *Der Zeus des Phidias*. 530 pages, 35 plates. Weidmann, Berlin 1952 \$14.00

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MERRITT, B. D., H. T. WADE-GERY and M. F. MCGREGOR. *The Athenian Tribute Lists. Volume 4*. xiii, 278 pages. American School of Classical Studies at Athens, Princeton 1953 \$10.00

MYLONAS, GEORGE E., and DORIS RAYMOND, editors. *Studies Presented to David Moore Robinson, Volume 2*. xx, 1336 pages, 98 plates. Washington University, St. Louis, Missouri 1953 \$35.00

OHLY, DIETER. *Griechische Goldbleche des 8. Jahrhunderts v. Chr.* 172 pages, 31 plates. Mann, Berlin 1953 \$7.50

PROSKE, BEATRICE G. *Castilian Sculpture*. 525 pages, illustrated. Hispanic Society of America, New York 1952 (Hispanic Notes and Monographs. Peninsular series) \$15.00

RAYMOND, DORIS. *Macedonian Regal Coinage to 413 B.C.* xi, 170 pages, 15 plates. American Numismatic Society, New York 1953 (Numismatic Notes and Monographs, No. 126)

ROWLAND, BENJAMIN. *The Art and Architecture of India*. xviii, 289 pages, 190 plates. Penguin Books, Baltimore 1953 (The Pelican History of Art, Volume 2) \$8.50

SALMONY, ALFRED. *Archaic Chinese Jades, from the Edward and Louise B. Sonnenschein Collection*. xiii, 279 pages, 108 plates (1 in color). Chicago 1952 \$25.00

SATTERTHWAITE, LINTON. *Piedras Negras Archaeology: Architecture, Part V, Sweatshouses*. 92 pages. University Museum, Philadelphia 1952

SHOE, LUCY T. *Profiles of Western Greek Mouldings*. 2 volumes; xvi, 191 pages, 20 figures; atlas of 32 plates. American Academy in Rome 1952 (Papers and Monographs of the American Academy in Rome, 14)

STARCKY, JEAN. *Palmyre*. 130 pages, 14 plates, 11 figures. Maisonneuve, Paris 1952 (Coll. l'Orient ancien illustré, 7) \$1.00

STUCCHI, S. *Forum Iulii (Civiale del Friuli). Regio X—Venetia et Histria*. 135 pages, 12 plates, 12 figures, 2 plans. Istituto da Studi Romani, Rome 1951 (Italia Romana: Municipi e Colonie—Series 1, Volume 11) \$1.50

TOYNBEE, ARNOLD J., translator and editor. *Twelve Men of Action in Graeco-Roman History*. 108 pages. The Beacon Press, Boston 1952 \$2.00

TROESCHER, GEORG. *Kunst- und Künstlerwanderungen in Mitteleuropa, 800-1800*. Verlag für Kunst und Wissenschaft, Baden-Baden 1953 \$14.50

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